Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgaaaagac ttcacaagag gttcctctta gctacgtttt gcgcgttatt aacagcaact 60
ctccaggccg ccgatgtcac tatcactgtt aatggtcggg tagtcgctaa accctgcact 120
attcaaacca aagaagctaa cgttaatctc ggggatcttt atacgcgcaa tctgcaacaa 180
cctggttctg catctggctg gcacaatatt actttgtcat taaccgattg tccggctgaa 240
acaagtgcag tgacggcaat cgtgacaggt tcaactgaca atacgggtta ttacaaaaat 300
gaaggtactg ccgaaaatat tcagatagag cttagggatg accaggatgc gacgttaaaa 360
aatggcgata gcaaaacggt tattgttgat gagatcactc gtaatgcaca gtttccactt 420
aaggcaagag ctatcacggt gaatggaaac gcaagccagg gaacgatcga ggcgctaatc 480
aatgtgatct acacctggca ataa 504
<212> Type : DNA
<211> Length : 504
SequenceName : SEQ ID 431
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgcgggcga aacttctggg aatagtcctg acaacccctа ttgcgatcag ctcttttgct 60
tctaccgaga ctttatcgtt tactcctgac aacataaatg cggacattag tcttggaact 120
ctgagcggaa aaacaaaaga gcgtgtttat ctagccgaag aaggaggccg aaaagtcagt 180
caactcgact ggaaattcaa taacgctgca attattaaag gtgcaattaa ttgggatttg 240
atgccccaga tatctatcgg ggctgctggc tggacaactc tcggcagccg aggtggcaat 300
atggtcgatc aggactggat ggattccagt aaccccggaa cctggacgga tgaaagtaga 360
caccctgata cacaactcaa ttatgccaac gaatttgatc tgaatatcaa aggctggctc 420
ctcaacgaac ccaattaccg cctgggactc atggccggat atcaggaaag ccgttatagc 480
tttacagcca gaggtggttc ctatatctac agttctgagg agggattcag agatgatatc 540
ggctccttcc cgaatggaga aagagcaatc ggctacaaac aacgttttaa aatgccctac 600
attggcttga ctggaagtta tcgttatgaa gattttgagc taggtggcac atttaaatac 660
agcggctggg tggaagcatc tgataacgat gagcactatg acccaggaaa aagaatcact 720
tatcgcagta aagtcaaaga ccaaaattac tattctgttt cagtcaatgc aggttattac 780
gtaacaccta acgcaaaagt ttatgttgaa ggcacatgga atcgggttac gaataaaaaa 840
ggtaatactt cactttatga tcacaatgat aacacttcag actacagcaa aaatggtgca 900
ggcatagaaa actataactt catcactact gctggtctta agtacacctt ttaa 954

<212> Type : DNA
<211> Length : 954
SequenceName : SEQ ID 432
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
ttgtttttta agcgaggaaa gattttgagt gcgggacgcc tgaataaaaa atctctgggt 60
atcgtgatgt tgttatcggt tggactgctt ttggcgggct gttcgggtag caaatcatcc 120
gatacaggaa cgtattccgg ctccgtttac accgtgaaac ggggggatac gctatatcgt 180
atttcgcgca ccacgggaac cagcgtaaaa gagctggcgc gactgaacgg catttccccc 240
ccttacacca ttgaagttgg tcagaaacta aaactgggtg gggcgaaaag tagcagtagt 300
acacgtaaat caaccgccaa atcaacgacc aaaaccgcat cggttacacc gtcatcagcg 360
gtaccgaaat cttcctggcc gccagtaggg caacgttgtt ggttatggcc aacgacaggg 420
aaagttatca tgccgtattc gacagcagat ggcggcaata aagggattga tatctcagct 480
ccacggggta cacctattta cgccgcgggt gcaggaaagg tggtgtatgt gggcaaccag 540
ctgcgtggct acggtaatct catcatgatt aaacacagtg aagattacat tacggcttac 600
gcccataatg acacgatgct ggtaaataat gggcaaagcg tgaaggctgg gcaaaaaatc 660
gccaccatgg ggagcacgga tgcggcatct gttcgcctgc atttccagat tcgttaccgt 720
gcaacggcaa ttgatccgct acgttacttg ccgcctcagg gcagcaagcc aaaatgctga 780

<212> Type : DNA
<211> Length : 780
SequenceName : SEQ ID 433
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgccaacac caaatcctct ggcaccggtg aaaggggccg ggaccacact gtgggtttat 60
aacgggaacg gcgacccata tgcaaacccg ctttcagaca atgactggtc gcgtctggca 120
aaggttaaag acctgacgcc cggcgaactg accgctgagt cctatgacga cagttatctc 180
gatgatgaag atgcggactg ggccgcgacc ggacaggggc agaaatccgc tggagatacc 240
agcttcacgc tggcgtggat gcccggagag caggggcagc aggcgctgct ggcgtggttt 300
aatgaaggtg atacccgtgc ctataaaatc cgcttcccga acggcacggt cgatgtgttc 360
cgcggctggg tcagcagtat cggtaaggcg gtgacggcga aggaagtgat cacccgcacg 420
gtgaaagtca ccaacgtggg acgtccgtcg atggcagaag atcgcagcac ggtaacagcg 480
gcaaccggca tgaccgtgac gcctgccagc acctcggtgg tgaaagggca gagcacgacg 540
ctgaccgtgg cattccagcc ggaaggcgca accgacaaga gcttccgtgc ggtgtctgcg 600
gataaaacaa aagccaccgt gtcggtcagt ggtatgacca tcaccgtgaa aggtgttgct 660
gcaggcaagg tcaacattcc ggtcgtatcc ggtaatggtg agtttgctgc ggttgcagaa 720
atcaacgtca ccgccagtta a 741
<212> Type : DNA
<211> Length : 741
SequenceName : SEQ ID 434
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgtctgctt tgtatgaacg ctcacagctg acgcaggtga tgatttcatc tgccccggcg 60
actgctgaaa ctatggataa ggcggaatat ctgcgcctgg actgcaccat caaggaagtg 120
cagttcaccg ccgggcagaa acaggatatt gatgtgacca cgctctgctc cacagagcag 180
gagaacatca atggtctggg ggcgtcgtct gagatttcca tgtcgggcaa tttttatctg 240
aatcaggccc agaacgccct gcgtgatgcc tatgacaatg acgcgttgta tgcgtttaag 300
gtgctgtttc cgtccggtaa gggctttaaa ttcctggcgg aagtgcgcca gcacacctgg 360
tcatccggta ccaacggcgt ggtggctgca acgttctcac tgcgtctgaa aggcaaaccg 420
gtgtcctttg tggtaccgct ggcgtttgtg aaaaatctgg ataagacact taccgtgaat 480
accggtgcgc tgctgacaat gtcagtcagt gccaacgggg gaacgccgcc gtataaatac 540
gcctggaaga aggatggtca gccggttgac gggcagacga cagacacctt cagtaagcca 600
ggtgcgcagt ccgctgatgc ggggaaatat acctgtgtgg tgaccgattc ggcagagaaa 660
gcacagagtg tgacgtctgt tgaatgcacc gtgacagtga gcgcagccgc cggataa 717

<212> Type : DNA
<211> Length : 717
SequenceName : SEQ ID 435
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgaaaaaga gcactctggc attagtggtg atgggcattg tggcatctgc atccgtacag 60
gccgcagaaa tatataacaa agacggtaat aaactggatg tctatggcaa agttaaagcc 120
atgcattata tgagtgataa cgacagtaaa gatggcgacc agagttatat ccgttttggt 180
tttaaaggcg aaacacaaat taacgatcaa ctgactggtt atggtcgttg ggaagcggag 240
tttgccggaa ataaagcgga gagtgatact gcacagcaaa aaacgcgtct cgcttttgcc 300
ggattgaagt ataaagattt gggttctttc gactatggcc gtaacctggg cgcgttgtat 360
gacgtggaag cctggaccga tatgttcccg gaatttggtg gcgactcctc ggcgcagacc 420
gacaacttta tgaccaaacg cgccagcggt ctggcgacgt atcggaacac cgacttcttc 480
ggcgttatcg atggcctgaa cttaaccctg caatatcaag ggaaaaacga aaaccgcgac 540
gttaaaaagc aaaacggcga tggcttcggc acgtcattga catatgactt tggcggcagc 600
gatttcgcca ttagtggggc ctataccaac tcagatcgca ccaacgagca gaacctgcaa 660
agccgtggca caggcaagcg tgcagaagct tgggctacag gtctgaaata cgatgccaat 720
aatatttatc tggcaacttt ttattctgaa acacgcaaaa tgacgccaat aactggcggc 780
tttgccaata agacacagaa ctttgaagcg gtcgctcaat accagtttga ctttggtctg 840
cgtccatcgc tgggttatgt cttatcgaaa gggaaagata ttgaaggtat cggtgatgaa 900
gatctggtca attatatcga tgtcggggct acatattatt tcaacaaaaa tatgtcagcg 960
tttgttgatt ataaaatcaa ccaactggat agcgataaca aattgaatat taataatgat 1020
gatattgtcg cggttggcat gacctatcag ttttaa 1056

<212> Type : DNA
<211> Length : 1056
SequenceName : SEQ ID 436
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgcgtgtca aacatgcagt agttctactc atgcttattt cgccattaag ttgggctgga 60
accatgactt tccagttccg taatccaaac tttggtggta acccaaataa tggcgctttt 120
ttattaaata gcgctcaggc ccaaaactct tataaagatc cgagctataa cgatgacttt 180
ggtattgaaa caccctcagc gttagataac tttactcagg ccatccagtc acaaatttta 240
ggtgggctac tgtcgaatat taataccggt aaaccgggcc gcatggtgac caacgattat 300
attgttgata ttgctaaccg cgatggtcaa ttgcagttga acgtgacaga tcgtaaaacc 360
ggacaaacct cgaccatcca ggtttcgggt ttacaaaata actcaaccga tttttaa 417

<212> Type : DNA
<211> Length : 417
SequenceName : SEQ ID 437
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgaaaagaa aagttctggc aatgctggtc ccggcgttat tagttgctgg cgcagcaaat 60
gcggctgaaa tttataataa agatggcaat aaactggatt tgtacggaaa agtagcgggc 120
ctgcactact tctctgatga tgctagcagc gatggcgaca tgtcatatgc ccgtatcggt 180
ttcaaaggtg aaactcagat cgctgaccaa ttcactggtt atggtcagtg ggaatttaac 240
attggcgcaa acggtcctga aagcgacaag ggtaataccg caacgcgtct ggcatttgca 300
ggtttcggct ttggtcagaa tggtactttc gactatggtc gtaactacgg tgtcgtatat 360
gacgtagaag catggaccga tatgctgcca gaatttggtg gagataccta tgctggcgct 420
gacaacttca tgaacggtcg tgctaacagc gtagcaacct atcgtaacaa tggtttcttt 480
ggtcaagttg atggtctgaa ctttgcactc cagtatcagg gtaacaacga gaaaagcgga 540
ttatttgatc aagaaggttc aggtaacggt aatggacgta aacttgctaa agagaacggc 600
gacggttcag tatgtccact tcctatgact ttgactttgg tttaa 645
<212> Type : DNA
<211> Length : 645
SequenceName : SEQ ID 438
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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gtaaaaattg agaaaaacag caacgcggta attaataaca ccggttccct gtcaacttta 120
caacttcacg atggtacggt gaataacagc ggtattgcgt cggcgcgcgt taacgctcag 180
ggcgatgcgg tattcaataa ccttgcaggc ggcgaggcgc gtaaaggcgc gattctctat 240
aactctgcgg tagtgaataa cgcgggtacc tggaaaatgg gttatcagga tgaaaacaac 300
aatgccggga cgctggatat tgacgataag tcaacgttca acaacagcgg caaactcatc 360
cttgataaca gcaaaaacgc cattcgcttc cagggcagca atgctaacgc cacgttatat 420
aacaccggtg aaatgacgct ggatgccgca ttaggtgcgg gcgctattct ctacgacgat 480
ggcgccagcg agtttattaa caagggcgtg gtggatgcga aagtcaccgt ggcggtaagt 540
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ttcgataaag acaacgccag cgcggttaaa ttcacccaca acaactatgt tgctctcaac 660
gatggtgtaa tgaacatcag cggcaacaac gccgtggcga tggaaggcga taaaaacgca 720
cagctggtta acaacggcgt tatcaatctc ggtaccgaag gcaccaccga taccggattg 780
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gttaacaacg gtacggtggt gattgccgac ggcgtgactg gttcggggtt gattaagcag 960
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gggatcaaca ccggtttcgc cgccggtacg gcagacacca cggtcagttt cgacaacgtg 1260

gtggaaggca tcaacctgac cgacgccgat gccatcacct caacgtccgt ggtatggacc 1320
gccaaaggca gcaccgatgc cagcggcaac gttgacgtca tcatgagcaa aaacgcctac 1380
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ctgaagcagg tgagcggtag ccaggcgacc acggtattcc gtgaagcgcg tgtgttaagc 1560
aaccgcttca gcatgctggc ggatgccgcg ccgaaggtgg gcaatggcct ggcctttaac 1620
gtggtggcga aaggtgaccc gcgtgcggaa ctcggaaata acaccgagta tgacatgctg 1680
gcactgcgta aaaccgttga cctgagcgaa agccagagca tgagcctgga atacggtatc 1740
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agccagttct ttggcctgaa gcaccagatg tccttcgaca atggtatgcg ttggaacaac 1860
gcgctgcgtt atgacgtgca taatctcgac agcagccgct cggtcgctta cggcgacgtc 1920
agcaaaacgg cggatacgga tgtgaaacag cagtacctgg agttgcgtag cgaaggggcg 1980
aaaacctttg agccgcgcga agggctgaaa atcaccccgt acgccggagt gaaactgcgt 2040
cactcgctgg aaggcggcta tcaggagcgc aatgccggag actttaacct gagcatgaac 2100
agcggcagcg aaacggcggt ggacagcatc gtcgggctga aactggacta cgcagggaaa 2160
ggcggctgga gcgcgaatgc gacgctggaa ggcgggccga acctgagcta cagcaagagc 2220
cagcgcacgg caagccttgc aggggcaggc agccagcact ttaacgtcga tgacggtcag 2280
aagggcggcg gtatcaacag cctggcgagc gtcggcgtga agtacagtag caaagaaagt 2340
tcgctgaatc tggatgcgta tcactggaaa gaggacggca tcagcgacaa aggcgtgatg 2400
ctgaacttta agaaaacgtt ctaa 2424

<212> Type : DNA
<211> Length : 2424
SequenceName : SEQ ID 439
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgcttaatg gaattagtaa cgctgcttct acactagggc ggcagcttgt aggtatcgca 60
agtcgagtga gctctgcggg gggaactgga ttttctgtag cccctcaggc cgtgcgtctt 120
actccggtga aagttcattc ccctttttct ccaggctcgt cgaatgttaa tgcgagaacg 180
atttttaatg tgagcagcca ggtgacttca tttactccct ctcgtccggc accgccgcca 240
ccgacaagtg gacaggcatc cggggcatcc cgacctttac cgcccattgc acaggcatta 300
aaagagcact tggctgccta tgaaaaatcg aaaggtcctg aggctttagg ttttaagccc 360
gcccgtcagg caccgccgcc accgacaagt ggacaggcat ccggggcatc ccgaccttta 420
ccgcccattg cacaggcatt aaaagagcac ttggctgcct atgaaaaatc gaaaggtcct 480
gaggctttag gttttaagcc cgcccgtcag gcaccgccgc caccgacaag tggacaggca 540
tccggggcat cccgaccttt accgcccatt gcacaggcat taaaagagca cttggctgcc 600
tatgaaaaat cgaaaggtcc tgaggcttta ggttttaagc ccgcccgtca ggcaccaccg 660
ccaccgacag ggcctagtgg actaccgccc cttgcacagg cattaaaaga tcatttagct 720
gcctatgagc aatcgaagaa agggtaa 747

<212> Type : DNA
<211> Length : 747
SequenceName : SEQ ID 440
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgaacaaga agattcattc cctggccttg ttggtcaatc tggggattta tggggtagcg 60
caggcacaag agccgaccga tactcctgtt tcacatgacg atactattgt cgttaccgcc 120
gccgagcaga acttacaggc gcctggcgtt tcgaccatca ccgcagatga aatccgcaaa 180
aacccgttg cccgcgatgt ttcggagatc atccgtacca tgccaggcgt taacctgacc 240
ggtaactcca ccagtggtca gcgagggaat aaccgacaga ttgatattcg cggtatgggt 300
ccggaaaaca cgctgatttt gattgacggc aagccggtaa gcagccgtaa ctcggtgcgt 360
cagggctggc gtggcgagcg cgatacccgt ggtgatacct cctgggtgcc acctgaaatg 420
attgaacgta ttgaagttct gcgtggtccg gcagctgcgc gttatggcaa cggcgcggcg 480
ggcggcgtgg ttaacatcat taccaaaaaa ggcagcggcg agtggcacgg ctcctgggac 540
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ctgaccggtc cgctgggcga cgaattcagc ttccgcttgt atggcaacct cgacaaaacc 660
caggctgacg cgtgggatat caaccagggt catcagtccg cgcgtgccgg aacgtatgcc 720
acgacgttac cagccgggcg cgaaggggtg atcaataaag atattaatgg cgtggtgcgc 780
tgggacttcg caccattgca atcgctggaa ctggaagcgg gttacagccg ccagggtaac 840
ctgtatgcgg gcgataccca gaacaccaac tctgacgctt acactcgctc gaaatatggc 900
gatgaaacca accgcctgta tcgccagaac tactcgctga cctggaacgg tggctgggat 960

aacggcgtga ccaccagcaa ctgggtgcag tacgaacaca cccgtaactc gcgtattccg 1020
gaaggtctgg cgggcggtac cgaagggaaa tttaacgaaa aagcgacaca ggatttcgtc 1080
gataacgatc ttgatgacgt gatgctgcat agcgaagtta acctgccgat tgatttcctc 1140
gttaaccaga cgctgacgct gggtacggag tggaatcagc agcggatgaa ggacttaagt 1200
tccaacaccc aggcactgac cggaacgaat accggtggcg ctattgatgg cgtgagtgcc 1260
accgaccgta gcccgtattc aaaagcagaa attttctcgc tgtttgccga aaacaacatg 1320
gagctgactg acagcaccat cgtaacgccg gggctgcgtt tcgatcatca cagtattgtc 1380
ggcaataact ggagcccggc gctgaacata tcgcaaggtt taggcgatga cttcacgctg 1440
aaaatgggca ttgcccgcgc ctataaagcg ccgagcctgt accagactaa cccgaactac 1500
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aacgatgacc tgaaagcaga aaccagcatc aacaaagaga ttggtctgga gttcaaacgc 1620
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ggctatgttg ctgtagggca aaacgcagtc ggcaccgatc tctatcagtg ggataacgtg 1740
ccgaaagcgg tggttgaagg tctggaagga tcgttaaacg taccggttag cgaaacggtg 1800
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ttgtcgatca tcccggagta tacgttgaac tcaacgctga gctggcaggc acgagaagat 1920
ttgtcgatgc aaacgacctt cacctggtac ggtaagcagc agccgaagaa gtacaactat 1980
aaaggtcagc cagcggttgg accggaaacc aaagaaatta gtccttacag cattgttggg 2040
ctgagcgcga cgtgggatgt gacgaagaat gtcagtctga ccggcggcgt ggacaatctg 2100
ttcgacaaac gtttgtggcg tgcgggtaat gcccagacca cgggcgattt ggcaggggcc 2160
aactatatcg ccggtgccgg ggcgtatacc tataacgagc cgggacgtac gtggtatatg 2220
agcgtaaaca ctcacttctg a 2241

<212> Type : DNA
<211> Length : 2241
SequenceName : SEQ ID 441
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
ttgggagggc gatttagtct caggtacaaa aaactctcat atagattcgt ttttctgacc 60
ttggcaggtt gttcttcagt aggcaaccag tcattgaaaa atgagacgca ggaaagtgtg 120
aaaaccaaaa ttgttaaagg caaaactaca aaacaggacg tgttagcatc gttcggtgaa 180
cctgacagcc gttctttgat cgatggtgaa gaacaatggt catacactat gtataacagc 240
cagtccaaag caacctcttt catccccgtt gtgggactgc ttgcaggtgg cgcagactca 300
caaactaaat ctctgacagt ttctttcaaa ggcgaaaaag tcagcacata catctttaat 360
gctggaacaa gcaacgtgaa gactggcatt ttttag 396

<212> Type : DNA
<211> Length : 396
SequenceName : SEQ ID 442
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgaaaaaaa ttgcatgtct ttcagcactg gccgcagttc tggctttcac cgcaggtact 60
tccgtagctg cgacttctac cgtaactggc ggttacgcac agagcgacgc tcagggccaa 120
atgaacaaaa tgggcggttt caacctgaaa taccgctatg aagaagacaa cagcccgctg 180
ggtgtgatcg gttcattcac ttacaccgag aaaagccgta ctgcaagctc tggtgactac 240
aacaaaaacc agtactacgg catcactgct ggtccggctt accgcattaa cgactgggca 300
agcatctacg gtgtagtggg tgtgggttat ggtaaattcc agaccactga atacccgacc 360
tacaaacacg acaccagcga ctacggtttc tcctacggtg ctggtctgca gttcaacccg 420
atggaaaacg ttgctctgga cttctcttac gagcagagcc gtattcgtag cgttgacgta 480
ggcacctgga ttgccggtgt tggttaccgc ttctaa 516

<212> Type : DNA
<211> Length : 516
SequenceName : SEQ ID 443
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgaagagta tagcaacact ggttgtgtgt gcaatctccg ggattgcctg tgtaaattta 60
tctgcacatg cagcagaagg agagcataca atttctctgg ggtatgcgca ctttcagttt 120

ccgggactga aggatttgt aaaggatgcg actgctcata acagggagac tttcagtcat 180
ttcgtcaaca gaaactactt ttcttcattg ggcgaatata cagatggtcg ggtcagtgga 240
tatgaaggca aggataaaaa tccacagggc attaatatca ggtatcgcta cgagataacg 300
gatgattttg gcgttatcac ctcttttaca tggacgcgtt ctctcactaa ctcacagaca 360
tttattgatg tgcagtcagc cgatcatacc aggaagatta agaatccggc agcttctgcc 420
agaacggata tcagggcgaa ttactggagt ctgttagcgg ggccttcatg gcgggttaat 480
cagtacatga gtttatatgc gatggcaggg atgggcgttg ctaaagttag cgctgacctg 540
aaaattaagg acaatattaa cagtagtggc ggattttctg aaagcaacag cacgaaaaaa 600
acctcccttg cgtgggctgc aggtgcacag tttaacctga atgagagtgt tacactggat 660
gtggcttacg aaggttccgg ctctggcgac tggcgcacga gtggcgttac tgctggcatt 720
ggcctgaaat tctga 735

<212> Type : DNA
<211> Length : 735
SequenceName : SEQ ID 444
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgcgtaaac tttatgccgc cattttgtcc gcagccattt gtctgaccgt atccggtgcg 60
cctgcatggg cgtctgagca gcaggccacg ctgagcgcgg ggtatcttca tgtctcgacg 120
aacgctcccg gtagcgataa tcttaacggg attaacgtga aataccgtta tgaattcacg 180
gacacgctgg ggctggtgac gtcattcagc tatgcaggag acaggaatcg ccagattacc 240
cgttacagcg atacccgctg gcatgaagat tccgtgcgta accgctggtt cagcgtaatg 300
gcggggccgt ctgtgcgcgt gaatgaatgg ttcagcgcgt atgcgatggc gggagtggct 360
tacagccgtg tgtcgacttt ctccggggat tatctccgcg taactgacaa caaggggaaa 420
acgcacgatg tgctgaccgg aagtgatgac ggtcgccaca gcaacacgtc tctggcgtgg 480
ggggctggcg tgcagtttaa cccgaccgaa tccgtggcca ttgatattgc ttatgaaggc 540
tccggcagtg gcgactggcg cactgacggt ttcatcgtgg gtgtcggtta taagttctga 600

<212> Type : DNA
<211> Length : 600
SequenceName : SEQ ID 445
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgcgtaaac tttatgccgc cattttgtcc gcagccatct gtctggccgt atccggcgcg 60
cctgcatggg cgtctgagca gcaggccacg ctgagcgcgg ggtatcttca tgcccggacg 120
agcgctcccg gtagcgataa tcttaacggg attaacgtga aataccgtta tgaatttacg 180
gacacgctgg ggctggtgac gtcattcagc tatgcaggag acaagaatcg ccagcttacc 240
cgttacagcg atacccgctg gcatgaagat tccgtgcgta accgctggtt cagcgtaatg 300
gcggggccgt ctgtgcgcgt gaatgaatgg ttcagcgcgt atgcgatggc gggtgtggct 360
tacagccgtg tgtcgacttt ctccggggat tatcttcgcg taactgacaa caaggggaaa 420
acgcacgatg tgctgaccgg aagtgatgac ggtcgccaca gcaacacgtc tctggcgtgg 480
ggggctggcg tgcagtttaa cccgaccgaa tccgtggcca ttgatattgc ttatgaaggc 540
tccggcagtg gcgactggcg cactgacggt ttcatcgtgg gtgtcggtta taagttctga 600

<212> Type : DNA
<211> Length : 600
SequenceName : SEQ ID 446
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgcgtaaac tttatgccgc cattttgtcc gcagccatct gtctggccgt atccggcgcg 60
cctgcatggg cgtctgagca gcaggccacg ctgagcgcgg ggtatcttca tgcccggacg 120
agcgctcccg gtagcgataa tcttaacggg attaacgtga aataccgtta tgaatttacg 180
gacacgctgg ggctggtgac gtcattcagc tatgcaggag acaagaatcg ccagcttacc 240
cgttacagcg atacccgctg gcatgaagat tccgtgcgta accgctggtt cagcgtaatg 300
gcggggccgt ctgtgcgcgt gaatgaatgg ttcagcgcgt atgcgatggc gggtgtggct 360
tacagccgtg tgtcgacttt ctccggggat tatcttcgcg taactgacaa caaggggaaa 420

acgcacgatg tgctgaccgg aagtgatgac ggtcgccaca gcaacacgtc tctggcgtgg 480
ggggctggcg tgcagtttaa cccgaccgaa tccgtggcca ttgatattgc ttatgaaggc 540
tccggcagtg gcgactggcg cactgacggt ttcatcgtgg gtgtcggtta taagttctga 600

<212> Type : DNA
<211> Length : 600
SequenceName : SEQ ID 447
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgcgtaaac tttatgccgc cattttgtcc gcagccatct gtctggccgt atccggcgcg 60
cctgcatggg cgtctgagca gcaggccacg ctgagcgcgg ggtatcttca tgcccggacg 120
agcgctcccg gtagcgataa tcttaacggg attaacgtga aataccgtta tgaatttacg 180
gacacgctgg ggctggtgac gtcattcagc tatgcaggag acaagaatcg ccagcttacc 240
cgttacagcg ataccgctg gcatgaagat tccgttcgta accgctggtt cagcgtaatg 300
gcggggccgt ctgtgcgcgt gaatgaatgg ttcagcgcgt atgcgatggc gggtgtggct 360
tacagccgtg tgtcgacttt ctccggggat tatcttcgcg taactgacaa caaggggaaa 420
acgcacgatg tgctgaccgg aagtgatgac ggtcgccaca gcaacacgtc tctggcgtgg 480
ggggctggcg tgcagtttaa cccgaccgaa tccgtggcca ttgatattgc ttatgaaggc 540
tccggcagtg gcgactggcg cactgacggt ttcatcgtgg gtgtcggtta taagttctga 600

<212> Type : DNA
<211> Length : 600
SequenceName : SEQ ID 448
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atggtcatga gccagaaaac cctgtttaca aagtctgctc tcgcagtcgc agtggcactt 60
atctccaccc aggcctggtc ggcaggcttt cagttaaacg aatttttcttc ctctggcctg 120
ggccgggctt attcagggga aggcgcaatt gccgatgatg caggtaacgt cagccgtaac 180
cccgcattga ttaccatgtt tgaccgcccg acattttctg cgggtgcggt ttatattgac 240
ccggatgtaa atatcagcgg aacgtctcca tctggtcgta gcctgaaagc cgataacatc 300
gcgcctacgg catgggttcc gaacatgcac tttgttgcac cgattaacga ccaatttggt 360
tggggcgctt ctattacctc taactatggc ctggcaacag agtttaacga tacttatgca 420
ggcggctctg tcgggggtac aaccgacctt gaaaccatga acctgaactt aagcggtgcg 480
tatcgcttaa ataatgcatg gagctttggt cttggtttca acgccgtcta cgctcgcgcg 540
aaaattgaac gtttcgcagg cgatctgggg cagctggttg ctggtcagat tatgcaatct 600
cctgccggga agactcctca agggcaagca ttggcagcta ccgccaacgg tatcgacagt 660
aataccaaaa tcgctcatct gaacggcaac cagtggggct ttggatggaa cgccggtatc 720
ctgtatgaac tggataaaaa taaccgctat gcactgacct accgttctga agtgaaaatt 780
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gcttacacca gctggagtca gttccagcag ctgaaagcga cctcaaccag tggcgacacg 1020
ctgttccaga aacatgaagg ctttaaagat gcttaccgca tcgcgttggg taccacttat 1080
tactacgatg ataactggac cttccgtacc ggtatcgcct ttgatgacag cccagttccg 1140
gcacagaatc gttctatctc cattccggac caggaccgtt tctggctgag tgcaggtacg 1200
acttacgcgt ttaataaaga tgcttcagtc gacgttggtg tttcttatat gcacggtcag 1260
agcgtgaaaa ttaacgaagg cccataccag ttcgagtctg aaggtaaagc ctggctgttc 1320
ggtactaact ttaactacgc gttctga 1347

<212> Type : DNA
<211> Length : 1347
SequenceName : SEQ ID 449
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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ggcaacaata tcgccaactc cgccacctac ggctttaaat caggcacggc ctcttttgcc 120

gatatgtttg ccggttcgaa agtgggactg ggggtaaaag ttgccggtat cactcaggac 180
tttaccgatg gcacgaccac caacaccggg cgtggtctgg acgttgctat cagccagaac 240
ggtttttttcc gtctggtaga tagcaacggt tcggtgttct acagccgtaa cggacaattt 300
aagctggatg aaaatcgtaa cctggtgaat atgcaaggtt tacagctgac gggttacccg 360
gcaaccggta cgccgccgac tattcagcaa ggggcgaatc cgactaacat ttcgatcccg 420
aataccctga tggcagcgaa aactaccacc acggcgtcga tgcagatcaa cctgaattcc 480
agcgatccgc ttccctctgt taacgcattt gatgccagca atgcggatag ctataacaaa 540
aaaggttcgg tgactgtttt cgacagtcag ggtaatgctc atgacatgag cgtctacttt 600
gtgaagaccg gggataataa ctggcaggtc tacacccagg atagcagtga tccaacaggt 660
acagccgagc ctgcaatgaa gctggtgttt aatgccaatg gcgttctgac ctcaaatcca 720
acagagaata ttaccaccgg cgcaattaac ggcgcagaac ccgccacgtt tagcctgagc 780
ttcctcaact ccatgcagca aaataccggc gctaacaaca ttgtggcaac cacccagaat 840
ggctacaaac cgggcgatct ggtgagttat caaatcaatg atgacggtac ggttgtcggc 900
aactattcca acgaacaaac ccaactgctg gggcagattg tactggcgaa ctttgccaac 960
aacgaaggtc tggcatccga aggcgacaac gtctggtctg cgacgcaatc ttctggcgtg 1020
gcgctgttgg ggacagccgg gacgggcaac tttggcaccc tgaccaacgg tgcgttggaa 1080
gcgtccaacg tcgatctcag taaagaactg gtcaatatga tcgttgccca gcgtaactat 1140
cagtctaacg cccagaccat caaaacccag gaccagatcc tcaacacgct ggttaactta 1200
cgctaa 1206

<212> Type : DNA
<211> Length : 1206
SequenceName : SEQ ID 450
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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caatcatccg cttgggctaa ctgtacaaac acacagatag gtcaaactga agatggtcgg 120
acagcgctta ttgagttcgg aaaaattaat atgaccgaca cctattttgc gccagcaggt 180
tcactcctcg cgacaacggt cgtacctccc actaactaca catcaggtgg cgcgacagga 240
agctccgtat tgtgggaatg tgatgcaaca gatttgccaa acatctattt tctggtcgct 300
accaatggcg acgaccgcgt ggggggcttt tacgatgcag gcgggcctga tggtctgagt 360
gatgtctatg ccacctggtt cgcttttgtc ggtctcaagc agaccatggc gggcgtgacg 420
cttggtcgtt actggaagaa agtgcccatc accagttatg ccactcaggg aactaaaatc 480
cagattcgct tacaggatat ccctcctctt catgctgagc tttatcgcat cagtacgcta 540
cctgatacat cagcaacaac aagttggtgc ggtaataata atacagatag tagtggagtc 600
ggattcgcaa aaccttccgg tacaatctat aactgtgttc agcccaatgc ctatattcag 660
ctttccggta ccagcggcat tttatttggt catgatgagc ccggcgaaga tagttctgtt 720
cattgggatt tctggggtgc tgataatggt tttggttacg gaatgcgttc ggccaatcga 780
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ttagaaggtg cgactcaccc cggatactcc agctatagtt actcttttat cgcccggttg 1260
aagaaactgc caaatcagac agtcagtgcg ggaaaagtgc gggcaacggc ttatatattg 1320
gtgaaaatgc aatga 1335

<212> Type : DNA
<211> Length : 1335
SequenceName : SEQ ID 451
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atggaaaaca atcgcaattt ccctgccaga caatttcatt cgctcacgtt ctttgccggt 60
ctttgtattg gcatcacgcc tgtggctcag gcactcgccg ccgaagggca aactaacgcg 120
gatgacacgc tggttgtcga agcatcaacg ccttcgcttt atgcgccaca acaatctgcc 180
gatccgaaat tctcgcgtcc ggtagcggat actacccgca cgatgacggt gatttctgaa 240
caagtgatta aagatcaggg cgcaaccaac cttaccgatg cgctcaaaaa cgtccccggc 300
gtgggtgcgt tttttgcggg tgagaacggt aactccacca ctggcgacgc catttatatg 360
cgcggtgctg atacctctaa cagtatttat attgatggca ttcgcgatat cggcagcgtc 420

tcgcgcgaca ccttcaatac tgagcaggtc gaagtgatta aagggccttc cggcaccgac 480
tacgggcgca gcgcgccgac gggctcgatc aatatgatca gcaagcagcc gcgcaatgat 540
tccggcattg acgcctccgc cagtattggc agcgcctggt tccgccgcgg cacgctggac 600
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gattacgacg attcgaccac cgacaccgcc accatgcgtt ttgagcacga tatcaacgat 960
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gcagggaata tcactcccgc gtggcaggtg attggcggct atacccagca aaaagcaacc 1920
atcaaaaacg gcaaagatgt tgcccaggat ggttcctcat cgctgccgta taccccggag 1980
cacgccttca ccttatggag ccaatatcag gcaaccgatg atatctctgt tggcgcgggc 2040
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accgaaggtt actgggtcgc cgatgccaaa ctggggtata gggttaatcg caatctcgac 2160
ttccagctaa acgtctacaa cctgtttgat accgattacg tcgcctcaat caataagagc 2220
ggctaccgtt atcacccggg cgagccaaga accttcttgc tcacagccaa tatgcatttc 2280
tga 2283

<212> Type : DNA
<211> Length : 2283
SequenceName : SEQ ID 452
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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ttgagccagg ccgagaacct gatgcaagtt tatcagcaag cacgccttag taacccggaa 120
ttgcgtaagt ctgccgccga tcgtgatgct gcctttgaaa aaattaatga agcgcgcagt 180
ccattactgc cacagctagg tttaggtgca gattacacct atagcaacgg ctaccgcgac 240
gcgaacggca tcaactctaa cgcgaccagt gcgtccctgc agttaactca atccattttt 300
gatatgtcga aatggcgtgc gttaacgctg caggaaaaag cagcagggat tcaggacgtc 360
acgtatcaga ccgatcagca aaccttgatc ctcaacaccg cgaccgctta tttcaacgtg 420
ttgaatgcta ttgacgttct ttcctataca caggcgcaaa aagaagcgat ctaccgtcaa 480
ttagatcaaa ccacccaacg ttttaacgtg ggcctggtag cgatcaccga cgtgcagaac 540
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aacgcggtag agcagctgcg ccagatcacc ggtaactact atccggaact ggcggcgctg 660
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aatgcgctga gcaaaccggt ttccactaat ccggaaaacg ttgccccgca aacgccggaa 1380
cagaatgcta ttgctgatgg ttatgcgcct gatagcccgg cacccgtcgt tcagcaaaca 1440
tccgcacgca ctaccaccag taacggtcat aacccctttcc gtaactga 1488

<212> Type : DNA

<211> Length : 1488
SequenceName : SEQ ID 453
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
gtgaccaaac tcaaacttct ggcacttgga gtgcttatcg caacgtctgc aggcgtagcg 60
cacgctgaag gtaaattttc cctgggcgca ggcgtaggtg tcgttgaaca cccatataaa 120
gattacgata ccgatgttta cccagtaccg gtaatcaact atgaaggcga taacttctgg 180
ttccgtggct taggtggtgg ttactacctg tggaatgacg caacggataa actttcaatt 240
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cacctggatg accgtaagag caccatgatg gctggtctgt cttatgctca ctttacccag 360
tacggttacc tgcgtaccac cctggctggc gataccctgg ataacagcaa cggcatcgtc 420
tgggatatgg cctggttgta tcgttacacc aacggtggcc tgaccgtgac tccgggtatt 480
ggtgtgcagt ggaacagcga aaaccagaac gaatactatt atggcgtatc gcgcaaagag 540
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ctgagcgcca gctacaactt cctcggcgac tggagtgttt acggtaccgc gcgctacacc 660
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<212> Type : DNA
<211> Length : 747
SequenceName : SEQ ID 454
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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aacgcagctg aaaacgacaa accgcagtat ctttccgact ggtggcacca gagcgttaac 120
gttgtcggaa gctatcacac ccgtttcgga ccgcagatcc gcaacgatac ctaccttgag 180
tacgaagcat tcgctaaaaa agactggttc gacttctatg gttatgcgga tgcgccggta 240
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gaaatcgaac cacgtttctc catcgacaag ctgaccaata ctgaccttag cttcggtccg 360
ttcaaagagt ggtacttcgc gaacaactac atttacgaca tgggtcgtaa taaagatggt 420
cgccagagca cctggtacat gggtctgggt accgatatcg acactggcct gccgatgagc 480
ctgtccatga acgtctatgc gaaataccag tggcagaact atggcgcagc gaacgaaaac 540
gagtgggacg gttaccgttt caaaattaaa tactttgtgc cgattaccga tctgtggggc 600
ggtcagctga gctacatcgg cttcaccaac ttcgactggg gttccgattt aggggatgac 660
agcggtaacg caatcaacgg tattaagacc cgtactaata actctatcgc ttccagccat 720
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ggtggtcagt ggaacgacga tgcagaactg aacttcggca acggcaactt caacgttcgc 840
tctaccggct ggggtggtta cctggtagta ggttacaact tctga 885
<212> Type : DNA
<211> Length : 885
SequenceName : SEQ ID 455
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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cttgccggtt gcatagcact ggcactatta ccttctgccg cttttgctgc accagccact 120
gaagaaacgg tgattgttga gggttcagcc acagctccag atgatggcga aaatgattac 180
agcgtaacgt ctacctctgc gggtaccaaa atgcagatga ctcaacgtga tattcctcag 240
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cgcgcgcgaa ttgtcggcgg ctaccagaat aacgactcat ggctggaccg ctacaatagt 720
gaaaagacct tcttctccgg cattgtcgat gctgatttag gcgatcttac gacgctttca 780

gccggttacg aatatcagcg cattgatgtt aatagcccaa cctggggcgg tttaccgcgc 840
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aacgccgtta atcctaatct gccacgcacc acggttaaaa tgttcaccag ctatcggttg 1920
cctgtcatgc cagagttgac agtcggcggt ggtgttaact ggcaaaatcg cgtgtatacc 1980
gacaccgtga caccgtatgg caccttccgc gccgagcaag gtagctacgc gttggtggat 2040
ctcttcaccc gctaccaggt gacgaaaaac ttctcgttac aggggaacgt caataacctg 2100
ttcgacaaaa cctacgatac caacgtggaa ggttctatcg tctacggcgc accgcgtaat 2160
ttcagcatta ccggcacgta tcaattctga 2190

<212> Type : DNA
<211> Length : 2190
SequenceName : SEQ ID 456
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atggcgcgat tccagtttaa aaaccgtaaa aataatggac ttatttttt tataagtttt 60
atggtgatgg gagaagctgc aattgctgca ccgctgccac aatgggcgaa tgccccagcg 120
gtaacgccag ttgcccaatt atctttacag gaaagtatat tacgcgcctt tgcgcgaaat 180
cccggtgtca ctcaacaggc ggcgcagata ggtattggcg aagcgcaaat tgatgaagcc 240
aaaagtgcct ggtatccgca cgttggatta accggcaacg cggggccgtc ccgacaaacg 300
gactccagcg gcaggcttga taacaacgtt tcgtatggca taaccctgac acaactggtg 360
tatgactttg gtaaaactaa caacgatatc aatctgcaaa ctgccgcccg tgacagctac 420
cgctttaaat tgatggcaac cttaaccgat gttgcagaga aaacggcgac tgcctacatg 480
gaagtcagtc gttatcaggc tttgtgcgat gcggctcaac gcaatattca ctcgctggaa 540
aacgtctaca acatggcggc attgcgcgct aacgcaggcc tgaactcatc gtcggatgaa 600
ttacaggccc agacgcgtat tgccggaatg cgctcaacgc tggagcaata tcaggcgcag 660
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caggtcgaac aggcaaaact ggatgtgctg caacgagcgt ctgtggcata tgcgaactgg 1080
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cgagatgtgt accaaaatga atataaattg ggtaaacgca gtctgaatga tctattaacc 1200
gtcgaacaag atgtctttca ggcgcaatcg gctgaaataa atgccaatta tgatggctgg 1260
gtcgccgccg taaattatgc cgctgcggtg aataacctta ttccattagc gggaattaaa 1320
cagggcttat acaacgactt acccgacttg aaataa 1356

<212> Type : DNA
<211> Length : 1356
SequenceName : SEQ ID 457
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atggctaagt tcacaccttc attctcagga atcaaaggtc gggcgctctt ttcactgctc 60
tttgcagcac caatgattca tgcaaccgac actgcaacga ccaaagatgg cgaaacaatc 120

actgttacag cggatgcaaa taccgcaact gaggcgaccg atggttatca acctctgagc 180
acttccacgg cgacattaac cgatatgccg atgctggata tcccgcaggt ggtcaatacg 240
gttagcgatc aggttctgga aaatcagaat gcaacgacgc tggatgaagc gctttataac 300
gtcagtaacg tggtacagac caatacatta ggcggaactc aggacgcctt tgtacgtcgt 360
ggttttggtg ctaaccggga tggctccatc atgaccaacg gcctgcgaac tgtacttcct 420
cgcagtttca acgccgccac agaacgtgtg gaagtgctaa aaggtccggc ctccacgctg 480
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atcacaggtc ccattgaagg cactcagctg gcataccgcc tgacgggggа agtgcaggat 660
gaagattact ggcgaaactt cggtaaagag cgcagtacat ttattgcccc gtcactcacc 720
tggtttggtg ataatgcaac agtaaccatg ctctattccc atcgggacta taaaactccg 780
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gtcggggcaa aattcgagct gttcgatggt ataaccgcag atattgcgct gtttgatatc 1620
cataaacgta acgtgttgta taccgaaagt attggtgatg aaaccatcgc caaaacggca 1680
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gggaaaccat tgccgaatgt tcctcgtcat accggttcgc tattcctgac ctatgacatt 1860
cataacatgc caggcaataa cacactgacg tttggcggtg gtggacattg cgtaagccgt 1920
cgttcggcaa ccaatggggc tgactattat ctgccaggct atttcgttgc cgatgccttc 1980
gccgcataca aaatgaaatt gcagtatccg gtcacactgc aattaaacgt caaaaacctg 2040
tttgataaaa cgtattacac ctcttccatc gccacaaata atctggggaa tcagattggc 2100
gatccgcgtg aagtgcaatt cacggtgaaa atggaatttt ga 2142

<212> Type : DNA
<211> Length : 2142
SequenceName : SEQ ID 458
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :

atgcggactc tgcagggctg gttgttgccg gtgtttatgt tgcctatggc agtatatgca 60
caagaggcaa cggtgaaaga ggtgcatgac gcgccagcgg tgcgtggcag tattatcgcc 120
aatatgctgc aggagcatga caatccgttc acgctctatc cttatgacac caactacctc 180
atctacaccc aaaccagcga tctgaacaaa gaagcgattg ccagttacga ctgggcggaa 240
aatgcgcgta aggatgaagt aaagtttcag ttgagcctgg catttccgct gtggcgtggg 300
attttaggcc cgaactcggt gttgggtgcg tcttatacgc aaaaatcctg gtggcaactg 360
tccaatagcg aagagtcttc accgtttcgt gaaaccaact acgaaccgca attgttcctc 420
ggttttgcca ccgattaccg ttttgcaggt tggacgctgc gcgatgtgga gatggggtat 480
aaccacgact ctaacgggcg ttcagacccg acctcccgca gctggaaccg cctttatact 540
cgcctgatgg cagaaaacgg taactggctg gtagaagtga agccgtggta tgtggtgggt 600
aatactgacg ataacccgga tatcaccaaa tatatgggtt actaccagct taaaatcggc 660
tatcacctcg gtgatgcggt gctcagtgcg aaaggacagt acaactggaa caccggctac 720
ggcggcgcgg agttaggctt aagttacccg atcaccaaac atgtgcgcct ttatactcag 780
gtttacagcg gctatggcga atcgctcatc gactataact tcaaccagac ccgtgtcggt 840
gtgggggtta tgctaaacga tttgttttga 870

<212> Type : DNA
<211> Length : 870
SequenceName : SEQ ID 459
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :

atggcggttc aaaagaatgt tatcaaaggc atactggcag gtacgtttgc gctaatgctg 60
agcggttgtg tcactgtgcc ggacgccatt aaaggcagca gtcccacgcc gcaacaagat 120
ttagttcggg tgatgagtgc gccgcagctg tacgttggtc aggaggcacg ctttggtggc 180
aaagtggttg cggtacaaaa ccagcaaggg aaaacccgcc tggaaattgc taccgtaccg 240
ctggacagcg gagccagacc gacgctggga gaaccttctc gcggtcgcat ttatgccgat 300
gtgaacggtt ttctggaccc ggtggatttc cgtggacaac tggttacggt agtcgggcca 360
atcactggtg cggttgacgg aaaaatcggc aacacgccct ataaatttat ggtgatgcag 420
gcaacaggtt acaaacgttg gcatttaacc cagcaggtga ttatgccgcc tcagccgatt 480
gatccctggt tttatggcgg tcgtggctgg ccctatggcc acggcggatg gggctggtat 540
aatcccggcc ccgcgagagt acaaacagtt gtaactgaat aa 582

<212> Type : DNA
<211> Length : 582
SequenceName : SEQ ID 460
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgcgtaagc agtggctcgg gatctgcatc gcggcaggaa tgctcgcggc atgtacaagc 60
gatgatggtc agcaacagac agtaagtgta ccgcagcctg cggtatgtaa cggccccata 120
gttgaaatta gcggggcgga cccgcgtttc gaaccactga acgcgacggc aaatcaggat 180
taccagcgcg acggtaaaag ctacaaaatc gtgcaggatc cgtctcgatt tatccaggcg 240
ggactggcgg caatctatga tgccgaacca ggcagtaacc tgacggcctc tggcgaagct 300
ttcgatccga cacagctgac ggcggcccat ccaacgcttc cgatccccag ctacgccaga 360
atcactaacc tggctaacgg gcgaatgatc gtggtgcgca ttaatgatcg cggtccttac 420
ggcaacgacc gcgttatttc gctttctcgc gcagcagctg accgtcttaa cacgtcaaac 480
aacaccaaag ttcgtatcga tccgattatt gtcgcccagg atggttcgct ttctggtcct 540
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agcggtggcg cgggaacaag ttcagtgtct ggcccgcagg gtgacattct tccggtcagt 660
aattcgacgc taaaaagcga agatccgacc ggcgcgccgg taaccagcag cggtttcctc 720
ggcgcaccaa cgaccttagc gccaggtgta ctggaaggca gcgaaccgac gcctgctcca 780
cagcccgttg ttacagctcc gtcgacaacg cctgcaacct cgcctgcaat ggtgacaccg 840
caagccgcct cgcaaagcgc cagcggcaac tttatggtgc aggtcggggc cgtaagcgat 900
caggctcgtg cgcaacagta ccaacagcaa ctgggacaga agttcggcgt ccccggtcgc 960
gtaactcaaa atggcgcggt ctggcggatc cagcttggcc cattcgccaa caaagccgaa 1020
gccagtacct tgcagcaacg tttgcaaacc gaagcccaat tacagtcatt tattaccacc 1080
gcgcagtag 1089

<212> Type : DNA
<211> Length : 1089
SequenceName : SEQ ID 461
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgattaaac gcgtattggt tgtttcaatg gtaggtctgt ctcttgtcgg ttgtgttaat 60
aacgacaccc tgtcagggga tgtttatacc gcttctgaag cgaaacaagt acagaatgtc 120
agctatggaa ccatcgttaa cgtacgtccg gtacagattc agggcggtga tgattccaac 180
gttatcggtg caattggcgg tgctgttctt ggtggtttcc tgggaaatac tgttggtggc 240
ggaaccgggc gttctctggc tactgcagca ggcgctgttg caggtggcgt agctggtcag 300
ggcgtacaga gtgcaatgaa caaaacgcaa ggtgtcgagc tggaaattcg taaagacgat 360
ggtaatacca tcatggtggt acagaaacaa ggcaacactc gtttctctcc gggccaacgt 420
gtcgtactgg ccagcaatgg cagtcaggtg accgtttctc cgcgctaa 468

<212> Type : DNA
<211> Length : 468
SequenceName : SEQ ID 462
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
gtgtcaaagg caaccgaaca aaacgacaag ctcaagcggg cgataattat ttcagcagtg 60
ctgcatgtca tcttatttgc ggcgctgatc tggagttcgt tcgatgagaa tatagaagct 120
tcagctggag gcggcggtgg ttcgtccatc gacgctgtca tggttgattc aggtgcggta 180

gttgagcagt acaaacgcat gcaaagccag gaatcaagcg cgaagcgttc tgatgagcag 240
cgcaagatga aggaacagca ggctgctgaa gaactgcgtg agaaacaagc ggctgaacag 300
gaacgcctga agcaacttga gaaagagcgg ttagctgctc aggaacagaa aaagcaggct 360
gaagaagccg caaaacaggc cgagttaaag cagaagcaag cggaagaggc ggcagcgaaa 420
gcggcggcag atgctaaagc gaaggccgaa gcggatgata aagctgcgga agaagcagcg 480
aagaaagcgg ctgcagacgc gaagaaaaaa gcagaagcag aagccgccaa agccgcagcc 540
gaagcgcaga aaaaagccga ggcagcagct gcggcgctga agaagaaagc ggaagcggca 600
gaagcagctg cagctgaagc aagaaagaaa gcggcagcag agaaagctgc agccgacaaa 660
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aaagccgccg cagacaaaaa agcggcagct gcaaaagcag cagctgaaaa agccgctgca 780
gcaaaagctg ccgcggaggc agatgatatt ttcggtgagc taagctctgg taagaatgca 840
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aaaaacaatg gcgcatcagg ggccgatatc aataactatg ccgggcagat taaatctgct 960
atcgaaagta agttctatga cgcatcgtcc tatgcaggca aaacctgtac gctgcgcata 1020
aaactggcac ccgatggtat gttactggat atcaaacctg aaggtggcga tcccgcactt 1080
tgtcaggctg cgttggcagc agctaaactt gcgaagatcc cgaaaccacc aagccaggca 1140
gtatatgaag tgttcaaaaa cgcgccattg gacttcaaac cgtaa 1185

<212> Type : DNA
<211> Length : 1185
SequenceName : SEQ ID 463
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
gtgatgaaat ttaaaaaatg tcttctgcct gtggcaatgt tagcgtcatt cactctggca 60
ggatgccagt caaatgctga cgatcatgcc gccgatgttt atcaaaccga tcaactgaat 120
accaaacaag aaactaaaac cgttaatatt atttccattc ttcccgcaaa agttgccgta 180
gacaactccc aaaataaacg gaacgcacaa gccttcggcg cgcttattgg cgcagtcgct 240
ggcggtgtta tcggccacaa cgtcgggtct ggcagcaatt ccggaacgac ggcaggtgca 300
gttggcggcg gagctgtagg cgcggcagcg ggttctatgg tgaatgataa aaccttagtg 360
gaaggtgttt ctttaacgta taaggaaggc accaaagtgt atacctctac tcaggtgggt 420
aaagagtgcc agtttacgac aggtttagcc gttgttatta ccacgacgta taacgaaacg 480
cgtattcagc caaataccaa atgtcctgaa aagagctaa 519

<212> Type : DNA
<211> Length : 519
SequenceName : SEQ ID 464
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgttgctta gcataatcac tgtcgcgttt cgtaacctcg aagggatagt caaaacacat 60
gcctcgctgg cgcatctggc gcaggcggaa gatatcagct tcgaatggat tgttgtcgat 120
ggcggttcca atgacggcac tcgtgagtac ctggaaaatc tcaatggtat ctataaccta 180
cgctttgtca gcgagccaga taacggtatc tacgacgcca tgaacaaggg cattgcgatg 240
gcacaaggca agttcgcgtt gtttctcaac tcgggcgata tttttcatca ggatgccgca 300
tattttgtcc gtaagttaaa aatgcaaaaa gataacgtga tgatcaccgg cgatgcgctg 360
ctggattttg gcgacgggca taaaattaaa cgtagcgcca aaccgggctg gtatatttat 420
cacagcctgc ccgccagtca tcaggcgata tttttcccgg tatccggttt gaaaaaatgg 480
cgttatgacc tggaatataa agtttcttct gattacgcgc tggcagccaa aatgtataaa 540
gcaggttatg catttaaaaa actcaatggc ctggtgtctg aatttttctat gggtggggta 600
tctaccacca ataatatgga attgtgtgct gacgcgaaaa aagtccaacg gcaaatatta 660
catgtgcctg gcttttgggc tgaattatcc tggcatttac gccagcgtac tacctcaaag 720
acgaaagcct tatataacaa aagctga 747

<212> Type : DNA
<211> Length : 747
SequenceName : SEQ ID 465
SequenceDescription :

Sequence

<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
atgaaattaa caacactgca aaccttgaaa aaagggttta cattaatcga gctaatgatt 60

gtgattgcaa ttattgctat tttagccacc atcgcaattc cttcttatca aaattatacc 120
aaaaaagctg cggtatccga attactgcaa gcgtctgcgc cttataaggc tgatgtggaa 180
ttatgtgtat atagcacaaa tgaaacaaca agctgtacag ggggaaaaaa tggtattgca 240
gcggatataa agacagcaaa aggctatgta gcctcagtta tcactcaatc aggtggtatt 300
acagtaaaag ggaatggcac attggcaaat atggaatata ttttgcaagc taaaggtaat 360
gctgcagcag gtgtaacttg gacaacaacc tgcaaaggaa cggatgcctc tttatttcca 420
gcaaattttt gcggaagtgt cacaaaatga 450
<212> Type : DNA
<211> Length : 450
SequenceName : SEQ ID 466
SequenceDescription :

Sequence

<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
atgctaaata aaaaattcaa actcaatttt attgcgctta ctgtcgccta cgcattaacc 60
ccttatacag aagctgcgtt agtgagagac gatgtggatt atcaaatatt tcgtgatttt 120
gcagaaaata aagggagatt ttctgttggt gcaacaaatg tggaagtgag agataaaaat 180
aaccactctt taggcaatgt tttacctaat ggcattccga tgattgattt tagtgttgtg 240
gatgtagata aacgcatcgc cacattgata aatccacaat atgtagtagg tgtaaaacac 300
gttagtaacg gcgtgagtga actacatttt gggaacttaa atggcaatat gaataatggc 360
aatgctaaat cgcaccgaga tgtatcttca gaagaaaata gatattttc cgttgagaaa 420
aatgagtatc caactaaatt gaatggaaaa gcagtaacta ctgaagatca aactcaaaaa 480
cgccgtgaag actactatat gccacgtctt gataaatttg ttaccgaagt tgcaccaata 540
gaggcttcaa ctgcaagtag tgatgctggc acatataatg atcagaataa atatcctgct 600
tttgtaagac taggaagtgg tagtcaattt atttataaaa aaggagataa ttacagctta 660
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gaaaaacaaa aaactgcaga attaaaacta agttttagtt tttaa 5085

<212> Type : DNA
<211> Length : 5085
SequenceName : SEQ ID 467
SequenceDescription :

Sequence

<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
atggcattag taaacaaaat taaaacatta tcatcagtag gtattctagc ggctacatta 60
tttcttgcag gctgccaagc acaatcaaat atattagcat ttacaccgcc tgcaccaagt 120
gcttcaatga atgttaatcg aactgccgtt gtatctgtga caacaaaaga tagccgtgca 180
atacaagaga ttgcgagtta tacgaaacac ggggaactga ttaaattaaa tgcatcccca 240
agtgttacac aattatttca gcaagtgatg cagcaaaatt taattagtaa aggttttaga 300
gttgggcaat taaatggttc aaatgcgtgg gtaactgtgg atgtgcgtga atttggtacg 360
caagtagaac aaggtaatct tcgttataaa cttaatacca aaattcaagc gacagtttat 420
gtacaaggtg cgaaaggttc gtataataaa tcatttaatg tcacgcactc acaagagggc 480
gtatttaatg cgggcaatga tgaaattcat aaagtgctat ctcaaacttt taatgatatt 540
gtgaacaata tttatcaaga tcaagaagtt gcggctgcga taaaccaata ttctaattaa 600

<212> Type : DNA
<211> Length : 600
SequenceName : SEQ ID 468
SequenceDescription :

Sequence

<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
atgctgtgct ggattggcta caaaaatggg attttaccgc agcagaacag cacgctatat 60
ccttggctga atccgtcaaa gtgcggcgta atttttgatg gttttcaact tgtgggcgat 120
gatttcaatt cagatcaaac ggctgaaaat acatcgccag cttggcaagt gctttacaca 180
acccatttac aaagttgctc gccgattcat agtggagaaa atttcgcacc catccctttg 240

tataaacaac taaaaaatca accgcaccta agccaagatc tgattaaatg gcaagaaaat 300
tggcaagcct gcgatcaact acaaatgaat ggtgcggtat tagaacaaca atctttggca 360
gaaatttccg atcatcaaag tacgctttca aaacacggac gatatttagc tcaagaaata 420
gaaaaagaaa ctggcatacc gacttactat tatttatatc gtgtaggtgg gcaatcttta 480
gaatctgaaa aatcccgttg ctgcccttct tgtggtgcaa attgggcgtt aaaagacgcg 540
atttttgata cctttcattt taaatgcgat acctgtcgat tagtttcgaa tctatcgtgg 600
aatttttgt aa 612
<212> Type : DNA
<211> Length : 612
SequenceName : SEQ ID 469
SequenceDescription :

Sequence

<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
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ggtttatctc aaactaaagc aaacggtagt aacaatacaa gagttggacc tcgcgtatcc 120
gtgggttata aagtaggaaa tacacgtgtt gcgggtgatt atactcatca tggaaaagtt 180
gatggcacaa aaattcaagg tttaggtgca tcagtattat atgattttga cacgaattct 240
aaagtgcaac cttatgttgg tgctcgtgta gcgactaatc aatttaaata caccaatcgc 300
gcagaacaaa agtttaaaag ttcttctgat attaagctcg gatatggggt tgtagcaggt 360
gcaaaatata agttagatgg caactggtac gcaaatggtg gagttgagta caatcgttta 420
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ttctaa 486
<212> Type : DNA
<211> Length : 486
SequenceName : SEQ ID 470
SequenceDescription :

Sequence

<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
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tggcaatctc ctattgggcc attggtattc tcttatgcca aaccaattaa aaaatatgaa 2340
aatgatgatg tcgaacagtt ccaatttagt attggaggtt ctttctaa 2388

<212> Type : DNA
<211> Length : 2388
SequenceName : SEQ ID 471
SequenceDescription :

Sequence

<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
atgttgaaaa aaacatctct tatttttacc gcacttttaa tgactggctg tgtgcaaaat 60
gcgaatgtaa caacacctca agcgcaaaaa atgcaagtag aaaaagtgga taaagcctta 120
caaaaaggcg aagctgatcg atatttatgt caagatgata gagttgttcg tgttgtacac 180
gccacgcata aaaaatacaa aaaaaatttg cattatgtta ctgtcacttt tcaaggcgta 240
tcagaaaaac taaccttaat gatttctgaa cgtggtaaaa attacgccaa tattcgttgg 300
atgtggcaag agcgtgatga ttttagtacg ctaaaaacga atctcggcga aattttagca 360
acgcaatgtg tctcacaaac aagtgaacgc ttatctggac aataa 405

<212> Type : DNA
<211> Length : 405
SequenceName : SEQ ID 472
SequenceDescription :

Sequence

<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
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caaccaacca accaaccaac caaccaacca accaaccaac caaccaacca accaaccaac 180
caaccaacca accaaaatag taatgtttct gaacaactag aacaaataaa tgtatctggt 240
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agtaatgtta tagatcaatc aacaggatta ggcattaacc gcttctacgc accaggtaga 3000
aattataaaa tgtcagttca gtttgaattt taa 3033

<212> Type : DNA
<211> Length : 3033
SequenceName : SEQ ID 473
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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aagggcatta aaaagaaaat cgctaaaaaa tatacaatca aaaactcgct ttctataatt 120
tattccttaa aaacgcattc aaattcttct ctatccatta ataaaaaaat cttcttaggg 180
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<213> OrganismName : Helicobacter pylori, strain J99
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<212> Type : DNA
<211> Length : 3867
SequenceName : SEQ ID 477
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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acaaacacca aaggcatcca agatctttca gatcgttatg aaagtttgaa caacctttg 180
aatagataca gcaccctaaa cacccttatc aaattgtccg ctgacccgag cgcgattaat 240
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gtgttcgctt attaa 2235

<212> Type : DNA
<211> Length : 2235
SequenceName : SEQ ID 478
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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gaatttggga tcaaggtgcc tctcatcaat caagcgtatt tgaatagtgc tggggctgat 3660
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<212> Type : DNA
<211> Length : 3714
SequenceName : SEQ ID 479
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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gctgaagaag atgggggctt tatgaccttt gggtatgaat taggtcaggt ggtccagcaa 180
gtgaaaaacc cgggtaaaat caaagccgaa gaattagcgg gcctgttaaa ctctaccacg 240
acaaacaaca ccaatatcaa tattgcaggc acaggaggga atgtcgccgg gactttgggc 300
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aatcttcacc aatgcggtag cactaatagc ggtaatggcg ctactgctgc cgctgctact 420
aacaatagcc cttgtttcca aggtaacctg gctctttata acgaaatggt tgactctatc 480
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aacacttact ataaagctgg tggcgctgaa gtgaaatact tccgccctta tagcgtgtat 1560
tgggtctatg gctacgcctt ctaa 1584
<212> Type : DNA
<211> Length : 1584
SequenceName : SEQ ID 480
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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ggcttttacg caagcgcggg aattcggatc ggtgaagccg ctcaaatggt gaaaaacacc 120
aaaggcattc aacagctttc agagaattat gaaaagttga acaatctttt aaataattac 180
aacaccctaa acactcttgt aaagctgtcc tccgatccga gtgctgtcaa cgacgcaagg 240
gataatctag gctcaagcac taggaatttg ctagatgtca aagccaattc ccccgcctat 300
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aatgtgccag gacaaaacac gacgaccatc acttgtaatt cgtattatga gccaggacat 480
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gcggctcagc atgggattga gttagggctt aaaatcccca ccatcaacac gaactactac 2040
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ttcgcttact aa 2112

<212> Type : DNA
<211> Length : 2112
SequenceName : SEQ ID 481
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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taa 1563

<212> Type : DNA
<211> Length : 1563
SequenceName : SEQ ID 482
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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aaaaacacca aaggcattca agatctttca gacagctatg aaagattgaa caacctttta 180
acgaattata gcgtcctaaa cgctctcatc aggcagtccg ccgaccccaa cgccatcaat 240
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gacaccaaca cagaactcaa attcacaatc aataaaaata atggaaacac gaatacgaat 660
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aagcatagag cgaccgataa cgcggcccaa catggcattg aactaggcac aaagatcccc 1980
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<212> Type : DNA
<211> Length : 2073
SequenceName : SEQ ID 483
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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gtgaaaaaca ctggagcatt acaaaatctt gcagacagat acgataactt gagcaacctt 180
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ttgggcgtga aaatccccac cattaacacg gattattatt ctttcatggg ggctgaactc 2040
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<212> Type : DNA
<211> Length : 2091

SequenceName : SEQ ID 484
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :

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gtgaaaaaca ctggagcatt acaaaatctt gcagacagat acgataactt gagcaacctt     180
ttaaaccaat acaattactt aaattcctta gtcaatctag ccagcacgcc tagcgcgatt     240
accggtgcga ttgacaatct aagctcaagc gcgatcaatc tcactagcgc taccaccact     300
tctccggcct atcaagctgt ggctttagcg ctcaatgcgg ctgtgggcat gtggcaagtc     360
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accaccacca cttgtaatgg agccagtaat gtagggccca atggtatcct atctagcagc     540
gaataccagg ttctcaatac cgcttatcaa actatccaaa ccgctttaaa ccaaaaccaa     600
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<212> Type : DNA
<211> Length : 2091
SequenceName : SEQ ID 485
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :

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gactattctg ggcaggtcaa tttgggttat agcgggatta ccgcgcctaa gagttggcaa     180
gatgaagaag tgaaaaaata cacaggaagc cgcacggtga tctctaacaa agcgctcacc     240
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tacgctcaca ttgagctaga cattttccct gttacctttc aagccattga tcgcattgat     480
gtgatcaaag gtggaggcag cgtgcaatat gggcctaaca cttatggggg tattgtcaat     540
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<212> Type : DNA
<211> Length : 2526
SequenceName : SEQ ID 486
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :

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<212> Type : DNA
<211> Length : 2007
SequenceName : SEQ ID 487
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 2007
SequenceName : SEQ ID 488
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 663
SequenceName : SEQ ID 489
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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gctatttcag acatgattag taacgctcaa aaaatcgttc aagaaaccca acaacttaac 960
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tttgcgtatt ga 1932
<212> Type : DNA
<211> Length : 1932
SequenceName : SEQ ID 490
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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gtttatatga gcgtgggcta tcaaatcggc gaagccgcac aaatggtgaa aaacaccggc 120
gaaatccaaa aagtctccaa cgcttacgaa aatttgaaca acctttttaac ccgctataat 180
gaactcaaac aaacggcctc taacactgat tcaagcaccg ctcaagcgat tgacaatcta 240
gaaaagagcg ctagcagatt gaaaacgacc cctaataccg ccaatcaagc cgtgtcctca 300
gcgctcagct ctgcggtggg catgtggcaa gtgatagcct ctaatttagc caacaactcg 360
ctatcttcta gcgaatacga aaaactcaaa gcgacttctc aattgctcca aaatacccta 420
gaaaataaaa acaataatct taaaattgaa aatgactatg accagctttt aactcaagct 480
agtaccatta ttaatacgct tcaaagccaa tgcccaggcg tagatggggg caatggcaaa 540
ccatggggca ttaatacaag cgggaacgca tgcgctattt ttggtagcac ctttaacgcc 600
attaatagca tgattgatag cgctaaaaaa gccgccgcag atgcccgaag aactgcccca 660
gaaagtccaa accaacaaaa cgcgtttacc aacgctgatt tcaataaaaa cctcaatcaa 720
gtctcaagcg ttatcaatga caccatctct tacctcaaag gggacaattt agaaaccatc 780
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gggatccatc atggcattga attaggcgtg aaaatcccta cgatcaacac caattactat 1380
tctttcatgg gcgctaaatt agcctaccgc aggctttata gcttgtacct caattatgtt 1440
ttggcttatt ga 1452

<212> Type : DNA
<211> Length : 1452
SequenceName : SEQ ID 491
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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tttgaagcta agctcaacgg ctttgtggat caatccagca cgatcggttt taaccagcat 120
aaaatcaata aagaaagagg catctaccct atgcagcaat tcgcaacgat tgcgggctat 180
ttagggcttg gttttagcct gttacccaaa aaggtttcag accatgttct aaaaggcaaa 240
atagggggca tggtcggatc tattttctat gacggcacga agaagtttga agacggctct 300
gtggcttaca acctctttgg ttattacgat gggtttatgg gggtctatac taatatctta 360
caaaccgata gccttgagac acagaacatg aaacacaaca aaaatgtccg caattatgtc 420
tttagcgacg cgtatttaga atacgcttat aagaattatt ttgaaataaa agccgggcgc 480
tatctctcca ctatgcctta taaaagcggt caaacgcaag gctttcaagt ttctgggcaa 540
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tttttaatgg attggtttgc cgcacggacc acttatagcg gaggctttac caaaaacaat 660
aatggaggtt atgatagcca tgggcgaaag gtgctttatg gcacgcatgc ggtgcaactc 720
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aacgctccag gcgttaagat tggttgggac tctaacccta attttagcgg cacaggcttt 840
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actgaatatt tgagcggtag cgtggatctt gcgtattatg gcgtgcatac taacaaaggc 1320
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agcgctttat acacggctct agtagcgtct ttttga 1416

<212> Type : DNA
<211> Length : 1416
SequenceName : SEQ ID 492
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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gaagcctttc aaaaacacca aaaagacgtc ttttttgtag aagctgggtt tgaaaccggg 120
ctattagaag gcgcgcaaac caaagaacaa gcaatagccc aaaacaccca aaacacccaa 180
aaaatttatg aaaaccccct aacccacccc caaactaaag aacaacctaa agaacaaaac 240
aaaagcgata cagccacccc acaaagcgtc tatgggagat actacatcct ccaaaacacc 300
attttagaaa aagcgactga gctattcaca gcggctaata tcaatggcaa cggcttaact 360
ttttattctc aaaaccctgt gtatgtgatg gcatacaata aagataatgc cgagtttgaa 420
ggctatggca ataacagcgt ggttgtgata caaaacttcc tgccctacaa tttaaacaat 480
attgagctga gttatacaga cgctcaaggc aaggcagtca atttaggcgt gatagagacc 540
atccctaaag attctcaaat catcttgcct gcaagtttgt ttaataattt ttcaaacgat 600
tcaccattca actctgatgg cctccaacaa ctccaaacca ctaccacccc cttttctgat 660
gctaacacgc agagtttgtt tgaaaagctc agtcaaatca cgaccaatct tcaaatgact 720
tatgagaata cagacccctt ttctagcggc aacaacgatc ctaatggccc tctcgcttct 780
cctaaacctc attatgaatg ccctggttat aaaaagagtt gtcaagtcgc ttcggtgtct 840
ttcaccccac aaaccgcaga agaattgacc aatttaatgt tagacatgat tgcggtgttt 900

gactctaaat cttgggaaga agccgtttta aacgcccctt tccaattttc taacagccca 960
tcagagtgcg gcattgatta ccctaaatgc gttaatccct ttaataacgg gcttgttgat 1020
cctaaagatg aaaaatacgc gctaacccca gaagaggtta tcaatagtta tagagtcgcc 1080
aatgaactta ccgtgaacct cttgaatgcg gccaaggggt ttctagggct aggatcccaa 1140
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gtttttgctt cctcttttgg ggtgtttggg gggttaaggg gcttatacaa tagctactat 2040
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tacaagcatt ctaaatattc cataggcgtt agcgttcctt taatccaaag cggtattaag 2160
atcgcttcta ataatggtat ctatgcagac tctgttgttt tgaatgaagg gggtagccat 2220
tttaaagtgt tttttaatta cgggtgggta ttttaa 2256

<212> Type : DNA
<211> Length : 2256
SequenceName : SEQ ID 493
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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tttcttaacc ctttaatggc agaagacgat gggtttttta tgggggtgag ttatcaaact 120
tctttggccg ttcaaagggt ggataactca gggcttaacg ccagtcaaga cgcatccact 180
tatatccgcc aaaacgctat cgctctagaa tctgcggcgg tgcctttagc ctattattta 240
gaagcgatgg gccaacaaac gagagtctta atgcaaatgc tctgccctga tccttctaaa 300
agatgtttgc tctatgcagg gggctatcaa aacggacaaa ataataacgg cgatacaggc 360
aacaaccccc caagaggcaa tgtcaatgcc acctttgata tgcaatctct agtcaataat 420
ttaaacaagc tcacccaact catcggcgaa actttaatcc gtaaccctga aaatcttcct 480
aactccaaag tctttaacgt caaatttggc aatcaaagca ctgttattgc attgcctgag 540
ggtctagcca ataccatgga cgctttaaac aatgacatca ccaacgcttt aaccacgctc 600
tggtataacc aaaccttaac gaataaatct tttagcaccc ctagtaacac ttctgtgaat 660
tttagccccc aagtcttgca acaccttta caagacggct tagccacagc aaataataat 720
caaaccattt gcagcactca aaaccaatgc accgccacta atgaagctaa atctatcgct 780
caaaacgccc aaaacatctt ccaggcttta atgcaagcag ggattttagg gggcttagcc 840
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ggtttttttg ccggtatcca acttgcaggg caaacctgga aaacgaattt tttagatcaa 1860
gtggatggca accatcttaa acctaaggac acttctttcc aattcctttt tgatttgggc 1920
ataaggacca atttttccaa aatcgctcat caaaaaagat cccgtttttc tcaagggata 1980
gaatttggcc ttaaaatacc ggtgctttat cacacctatt accaatcaga aggcgttaca 2040
gcgaagtata gaagagactt tagttttttat gtgggctaca acataggctt ttga 2094

<212> Type : DNA
<211> Length : 2094
SequenceName : SEQ ID 494
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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gaagacaacg gctttttttgt gagcgcgggc tatcaaatcg gcgaagcggt gcaaatggtc 120
aaaaacaccg gtgaattgaa aaacttgaac gaaaaatacg agcaattaag ccagtattta 180
aatcaagtgg cttcgttgaa gcaaagcatt caaaacgcca acaacattga gctggtcaat 240
agctctttaa actatttaaa aagctttacc aacaacaact acaacagcac cacccaatcg 300
cccatcttta acgccgtgca agccgttatc acttcggtat tgggtttttg gagtctttat 360
gcggggaact atctcacttt ttttgtggtt aataaggata ctcaaaaacc cgctagtgtc 420
cagggtaacc ctccttttttc aactattgtt caaaactgct caggaattga aaactgcgcg 480
atgaatcaaa ccacttatga taagatgaaa aagctcgctg aagatctcca agcagcccaa 540
caaaacgcta ccactaaagc gaacaatctt tgcgctttat ccggatgcgc cacaacacaa 600
ggccaaaacc caagctcaac cgtaagcaac gctcttaact tagcgcaaca gcttatggat 660
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gtcaatgctt ccaatttcca atttttgttc aatctcggct tgaggacgaa tctcgctaca 1800
gctaagaaaa aagacagcga acgttccgcg caacatggcg ttgaactggg cattaaaatc 1860
cctaccatta acaccaatta ttattctttt ctaggcacta agctagaata cagaaggctt 1920
tatagcgtgt atctcaatta tgtgtttgct tattaa 1956

<212> Type : DNA
<211> Length : 1956
SequenceName : SEQ ID 495
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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gaagcctttc aaaaacacca aaaagacggc tttttcatag aagccggctt tgaaaccggg 120
ctattacaag gcacacaaac ccaagaacaa accatagcca ccactcaaga aaaacccaaa 180
cccaaaccca aaccaaaacc cattacccct caaagcacct atgggaaata ctacatctcc 240
caaagcacca ttttaaagaa tgcgactgag ttgtttgcag aggataatat caccaactta 300
acctttttact ctcaaaaccc tgtgtatgta accgcttata accaagaaag cgctgaagaa 360
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aacattgagc tgagttacac ggacgatcaa ggcaatgtgg tcagtttggg cgtgatagag 480
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cagaatctgt ttaacaagct cagcaaggtt acaaccaatc ttcaaatgac ttatatcaat 660
tacaaccaat tttctagcgg taacggcagt ggctctaaac ccccatgccc cccatacgaa 720
aaccaagcaa attgtgtggc taaagtgccg cctttcacct ctcaagacgc taaaaatttg 780
accaatttaa tgctgaacat gatggcggtg tttgattcta aatcttggga agacgccgtc 840
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cttacatgcg tgaatcctta caacgatggg cttgttgatc ctaaattgat cgccaaaaat 960
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ctagggttgt cttcttatgg cattatcaaa tacaactacg ctcaagccaa caacgaaaaa 1860
atccagcaat taagctatgg cgtgggaatg gatgtgctgt ttgatttcat caccaattac 1920
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gtgtttgggg ggttaagggg cttatacaac agctattatt tgttgaacca atacaaaggg 2040
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ataggcatta gcgttccttt ggtccagttg aaatctagga tcgtttctag cgatggtgct 2160
tataccaatt ctatcaccct caatgaaggg ggcagtcatt ttaaagtgtt ttttaattac 2220
gggtggattt tctaa 2235

<212> Type : DNA

<211> Length : 2235

SequenceName : SEQ ID 496

SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99

<400> PreSequenceString :

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ggctttttca tagaagccgg ctttgaaact gggctattag aaggcacaca aacgcaagaa 120
aaaagacaca ccaccacaaa aaacacttac gcaacttaca attatttacc cacagacacg 180
attttaaaaa gagcggctaa tttattcacc aatgccgaag cgatttcaaa attaaaattc 240
tcatctttat cccctgttag agtgttgtat atgtataatg gtcaattaac tatagaaaac 300
ttcttgcctt ataatttaaa taatgttaag cttagtttta cagacgctca aggcaatgtg 360
atcgatctag gcgtgataga gactatcccc aaacactcta agattgtttt gcccggagag 420
gcatttgata gtctaaaaat tgacccctat actttatttc ttccaaaaat tgaagccact 480
agcacttcta tttctgacgc taacacgcag agggtgtttg aaacgctcaa taagattaag 540
acaaatttgg tcgtaaatta taggaatgaa aacaaattta aagatcacga aaatcattgg 600
gaagccttta ccccacaaac cgcagaagaa ttcactaatt taatgttgaa catgatcgct 660
gttttagact cccaatcttg gggcgatgcg atcttaaacg ctccttttga gttcactaac 720
agcccaacag attgcgataa tgatccttca aaatgcgtaa atcctgggac aaacgggctt 780
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aaaaacaaag cggatcttga tgtaattgtt ttaaaggatt caggggttgt agggcttggg 900
agtgatatta cccctagcaa caatgatgat ggcaagcatt atggccagtt aggggtagta 960
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gatttaagaa ccatcttgca tgaattcagc cacactaaag gctatgggca taacgggaat 1080
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aagccaaaag attctgatgg cctcccctat aatgtgtgtt cgctttatgg gggatccaat 1200
cagcccgctt tccctagcaa ctaccctaat tccatctatc acaattgtgc ggatgtcccg 1260
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accgggttga actaccgcta taagcattct aaatattctg tagggattag catcccttta 1860
atccaaagaa aagctagcgt cgtttctagc ggtggcgatt atacgaactc ttttgttttc 1920
aatgaagggg ctagccactt taaggtgttt ttcaattacg ggtgggtgtt ttag 1974

<212> Type : DNA

<211> Length : 1974
SequenceName : SEQ ID 497
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
atgagtctag ctacgagtta caatgtgagt aataattttt ctaagtttaa tattaagaga 60
gtcagaggat atttgatttg tcttgtttgt aacacaccta aaatgataca aagaggattg 120
aatggtgtct cattttatgg ttgctctgat tatgtaaata aaggcgactg taagggcgtt 180
ttacgagaaa taaatggctc aatgaaaatg gtctgcttac attgtgaaaa cacgcccata 240
atggaaaaag tagaaagtgg taggggagga gcttacgctt gtaagaattg caataggaag 300
ttttacttta tcgatcttgc aaaacaaaac gaacgaaaaa aagatttaga aaaagaaaaa 360
aaagaattgc ttaataagat tgaaaagcaa aaaatcaaac accttgagcg tttcattttg 420
gctggtgtaa aagctaatat taaagaaaat tctttttttct taggatgtaa aaattatcct 480
aagtgcgaat ggactgctag tatggattca caagatctta aatgtcccaa atgcaacaga 540
ttaatgaaaa gaaaaaagaa tttcaaaaac aatgagtttt ttacagctac atcgcttacc 600
ttaaatgcaa tagaattttg tctctatatt aatttgaaaa aaaaggaaac caatgtttag 660

<212> Type : DNA
<211> Length : 660
SequenceName : SEQ ID 498
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
ttggaaatta agaaatattt tctttacgct ctatttttttt tgctttttttc tggtcttttt 60
ttatccaaac ttcaagctta taaattcaac atgagtattg ttggaaaggt gagcagctat 120
actaagtttg gctttaacaa ccaaagatac cagccttcta aagacattta tcctacaggt 180
agttatactt ctttactcgg cgaattgaat ttgagcatgg gattatacaa gggcttgagg 240
gcagaagtag gggctatgat ggcagcgctt ccctatgact ctaccgccta tcaaggcaat 300
aatatcccta atggccagcc cggatctagg acggatcctt ttggggcggg tatcttttgg 360
caatacattg gctggtatgc aggacatagc ggtttaaacg tgcaaaaacc tcgtttggct 420
atggtgcata acgcttttttt gagctacaac tacaagaaag acaaattcag ttttggcgtg 480
aaaggggggc gctatgatgc tgaagagtat gattggttca cttcttacac tcaaggggtt 540
gaaggctttg tcaaatacaa agacaccagg ttaagggtga tgtattcaga cgctagggct 600
tcagcgtcaa gcgactggtt ttggtatttt gggcgttact atacaagcgg taaggctcta 660
atgattgcgg atttgaaata cgaaaaagac aacctaaaaa tcaaccctta tttttatgcg 720
atctttcaaa gaatgtatgc gccaggcatt aatatcactt acgacaccaa ccctaatttc 780
aacaataagg gctttcgttt tgtaggcact ttcgtggggt ttttccccat ttttgccact 840
ccggctaatc aaaatgatat tatcctattc caacaagtgc cattaggaaa gagcgggcaa 900
acttatttct tccgcactcg tttttactat aacaagtggc aatttggggg tagcgtctat 960
aaaaatatcg gtaacgctaa tggcgatata ggtatttatg gcgaccctct agggtataac 1020
atttggacga atagtattta tgacgcagaa attaacaata tcgttggcgc tgatgttatt 1080
aacgggtttt tatatgtagg ctcgcagtat agggggttta gttggaaaat tttaggccgt 1140
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aataagtata atattagaat ggatttgaaa ctagaatatt atggcaatat caccaaaaaa 1260
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caacctttaa cacacaacgt gtattctgac aggagccata tcatgtttaa cattacttat 1380
ggttttagga tttactag 1398

<212> Type : DNA
<211> Length : 1398
SequenceName : SEQ ID 499
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
atgaaaaaga caattctact ctctctctct ctctctctcg cttcatcgct cttgcatgct 60
gaagacaacg gcttttttgt gagcgcgggc tatcaaatcg gcgaagcggt gcaaatggtc 120
aaaaacaccg gcgaattgaa aaacttgaac gacaaatacg agcagttaag ccaatcttta 180
gcccaactgg cttcgttaaa aaaaagcatt caaacggcga acaacattca ggctgtcaac 240
aatgctttaa gcgatttaaa aagctttgcg agtaacaacc acacaaacaa agaaacatcg 300

cccatctaca acaccgcgca agctgttatc acttcagtat tggctttttg gagtctttat 360
gcagggaacg ctctcagttt tcatgtgacc ggtttgaatg atggatctaa ttctccttta 420
ggaagaatcc atagagatgg gaactgcaca ggattacaac aatgttttat gagcaaagaa 480
acttatgata aaatgaagac acttgccgaa aacctccaaa aagctcaagg caatctctgt 540
gccttatcag aatgctctag caatcaatca aatggaggca aaacttccat gactacagct 600
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aaaaatatcg tcatcgcagg tgttacaaac aaacccaatg gtgctggcgc tatcacatcc 720
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caacaagcgc ttacgctttc tcaaagtaac cacaccctat ccactcagtt gcaagctcga 840
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aacggcgctt tgaacgggct tggcgtgcaa gtgggttata aacaattctt tggcgaaagc 1440
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agcttttta attcttcttc tgatatatgg acttatggcg gtgggagcga tttgttagtg 1560
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ggtatccaac tagcagggac tacatggctt aattctcaat acatgaattt aacagcgttc 1680
aataaccctt acagcgcgaa agtcaatgct tccaatttcc aatttttgtt caatctcggc 1740
ttgaggacga atctcgctac agctaagaaa aaagacagcg aacgttccgc gcaacatggc 1800
gttgaactgg gcattaaaat ccctaccatt aacaccaatt attattcttt tctaggcact 1860
aagctagaat accgaaggct ttatagcgtg tatctcaatt atgtgtttgc ttattaa 1917

<212> Type : DNA
<211> Length : 1917
SequenceName : SEQ ID 500
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
atgaaattaa aaaaacgaaa agttgcggct acattgctaa agcgtttgac cttgccacta 60
ttgttcacta cgggttcatt aggggcggtt acttatgaag tgcatgggga ttttatcaac 120
ttctccaaag tgggttttaa ccgttcgcct attaaccctg ttaaaggtat ctatcctaca 180
gaaacttttg ttaaccttac gggtaagcta gaggggtctg tgcatttagg taggggatgg 240
accgtgaatg taggcggtgt tttgggcgga caagtttatg ataacactag gtatgatagg 300
tgggcaaagg attttacccc cccaagctat tgggataaaa cttcttgcgg cactgattct 360
ttgagccttt gtatgaatgc gactaaaatg tggcaacagc aagggccagg tggtatcatt 420
gaccctaggg gtattggcta tatgtatatg ggtgagtgga acggcttgtt ccctaattac 480
tatccggcta acgcctactt gcccgggcat tcaaggcgct atgaagttta taaagcgaat 540
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gagcaaatgg attggattta ccaattgttc caaggttttt atgggacttt caagcttact 660
aagaacatga aattcttgct ctttagctct tggggtcgtg gtatcgctga tggtcaatgg 720
ttgttcccta tctatcgtga aaagccttgg ggtattcata aggcgggtat tatttatcgc 780
cctacaaaga atctaatgat ccacccttat gtgtatctca tcccaatggt aggtacattg 840
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aaaacgactt tctatgtgtt gtatgactat cgttggaata acgctgaata cggccgttac 960
gcacccgctc gttataacac ttgggatccg ttcttggata atggtaagtg gcgtggcttg 1020
caaggtcctg gtggtgcgac gctctatttg caccaccaca tagacattaa caactacttt 1080
gtggttggtg gtgcttacct caacatcggt aaccctaaca tgaacttagg tacttggggt 1140
aaccctgtgg ctcttgatgg tatcgaacaa tgggtcggtg gcatctacag cttaggcttt 1200
gcggggattg acaacattac cgatgctgat gcgttcactg agtatgttaa aggtggaggt 1260
aagcatggta agttcagttg gagcgtttat cagcgcttca ctaccgcacc aagggctttg 1320
gaatatggta ttggtatgta tctagactat cagttcagca agcatgttaa agcgggtctc 1380
aaactcgtgt ggttagagtt ccaaatccgt gcgggttaca accctggaac cggtttcctt 1440
gggccaaacg gtcagccgct caacttgaat aatggtttgt ttgaatcttc ggcgttcgcg 1500
caaggccctc aaaacatggg tggtatcgca aaaagcatta ctcaagacag aagccatttg 1560
atgacacaca tcagttatag tttctaa 1587

<212> Type : DNA
<211> Length : 1587
SequenceName : SEQ ID 501

SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
atgaaaaact tttccccact ctattgtctt aaaaagctca aaaaacgcca tttaatcgct 60
ctgagtctgc ccttgctttc ttatgcgaat ggctttaaaa tccaagagca aagcttgaat 120
ggcacggctt taggctcggc gtatgtcgct ggggctaggg gtgctgacgc ttctttttac 180
aacccggcta acatgggctt tactaacgat tggggcgaaa acagaagcga atttgaaatg 240
accaccaccg tgatcaatat cccggccttt agctttaaag tccctacgac caatcaaggc 300
ttatattcgg taacaagttt agaaattgat aaaagccaac aaaatatttt aggcatcatc 360
aacactatag ggttaggcaa tatccttaaa gcgcttggca atacggccgc taccaatggc 420
ttatcacaag ctatcaatcg tgttcaaggg cttatgaact taaccaatca aaaagtcgta 480
accctcgctt caaaacctga cactcaaatc gtgaatggct ggacaggcac gactaatttt 540
gttttaccta aattctttta taaaacgcgc acgcataacg gcttcacttt tggggggagt 600
tttaccgctc ctagtgggtt gggtatgaaa tggaatggta agggggggga atttttgcat 660
gacgtgttta tcatgatggt agagcttgcc cctagcatga gttatactat taataaacgc 720
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tatgtgcctt tagagggcgc ttcagttttg agcgcggagc aaatcttaaa cttacccaac 840
aatgtttttg ccgatcaagt gccaagtaac atgatgactt tattaggcaa tattggctac 900
caaccagcgc ttaattgcca aaaagccggt ggggacatga gtgatcagag ctgtcaagag 960
ttttacaacg gcttgaaaaa aatcatgggt tatagcggtt taatcaaagc gagcgcgaat 1020
ctttatggca cgactcaagt cgtgcaaaaa tctaacggac aaggcgtatc gggggggtat 1080
agagtgggtt cgagtttgcg tgtgtttgat catggcatgt tttctgtggt gtataattct 1140
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ctagcgaatt ttaaaagcgt gatgaacatg ggggctggct ggagggacac caacaccttt 1500
agattagggg taacttacat gggtaaaagc ttgcgtttaa tgggcgctat tgattatgat 1560
caagccccaa gcccccaaga cgcgataggc attccggact ctaatggcta taccgtggct 1620
tttgggacta aatacaattt taggggcttt gatttgggcg tagcggggag tttcactttt 1680
aagagcaacc gctccagttt gtatcaatcc ccaactattg ggcaattgag aatctttagc 1740
gcctctttag gctatcgctg gtaa 1764
<212> Type : DNA
<211> Length : 1764
SequenceName : SEQ ID 502
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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actcaaaacg cacttaaaac ttcattggag cgattgagtt caggtttaag gatcaataaa 120
gcggctgatg acgcatcagg catgacggtg gcggattctt tgcgttcgca agcgagcagt 180
ttgggtcaag cgattgccaa cacgaatgac ggcatgggga ttatccaggt tgcggataag 240
gctatggatg agcaattaaa aatcttagac accgttaagg ttaaagcgac tcaagcggct 300
caagatgggc aaactacgga atctcgtaaa gcgattcaat ctgacatcgt tcgtttgatt 360
caaggtttgg ataatatcgg taacacaacg acttataacg ggcaagcgtt attgtctggt 420
caattcacta acaaagaatt ccaagtaggg gcttattcta accaaagcat taaggcttct 480
atcggctcta ccacttccga taaaatcggt caggttcgta tcgctacagg cgcgttaatc 540
acggcttctg gggatattag cttgactttt aaacaagtgg atggcgtgaa tgatgtaact 600
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atcaataaaa actctaaccg aacaggggtt aaagcttatg cgagcgttat caccacgagc 720
gatgtggcgg tccagtcagg aagtttgagt aatttaacct taaatgggat tcatttgggt 780
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cgcgatgtta ctgggaattt taacgctaat gtcaaatcag ccagtggcgc gaactataac 1200
gccgtgatcg ctagcggtaa ccaaagcttg ggatctgggg ttacaacctt aagaggcgcg 1260
atggtggtga ttgacattgc cgaatcagcg atgaaaatgt tggataaagt ccgctctgac 1320

ttaggttctg tgcaaaatca aatgattagc actgtgaata acatcagcat cactcaagtg 1380
aatgttaaag cggctgaatc tcaaatcagg gatgtggatt tcgctgaaga gagcgcgaat 1440
ttcaacaaaa acaacatttt ggcgcaatca ggcagctatg cgatgagtca agccaatacc 1500
gttcaacaaa atatcttaag gcttttaact tag 1533

<212> Type : DNA
<211> Length : 1533
SequenceName : SEQ ID 503
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
atggcaggca cacaagctat atatgaatca tcttctgcag gattcttatc gcaagtctcc 60
tcaatcatct caagcacaag tggtgtcgca gggccatttg caggaatagt agcgggcgct 120
atgacagcag cgattattcc tattgttgtg ggatttacta atccgcaaat gaccgctatc 180
atgacccaat acaatcaaag catcgctgaa gctgtaagcg tgcctatgaa agccgctaac 240
caacaataca accaattgta tcaaggtttt aacgatcaaa gcatggctgt ggggaacaat 300
atcttaaata tcagcaaatt aacaggggaa tttaacgcgc aaggcaacac gcaaagcgcg 360
caaattagtg ctgtcaatag tcagattgca agcattttag cgagtaacac tacccctaaa 420
aatcctagcg ctattgaagc ttatgcgacg aatcaaatcg ctgttcctag cgtgccaaca 480
acggttgaaa tgatgagcgg tatattaggc aatattacaa gcgcagcacc aaaatacgcc 540
ctagctctac aagagcaact gcgttctcaa gcaagcaaca gctcaatgaa tgatacagcc 600
gattcccttg atagctgtac cgctttaggc gcacttgttg gctcatcaaa agtgtttttc 660
agttgcatgc aaatttctat gactcctatg agtgtttcta tgcccactgt ttatgccaaa 720
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tgccctattg gggacaaggt tcttgccgtt tattgctatg ctgaaaaagt agcagaaatt 840
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caaatgatac ttaatcaatc aggattagct actagcacct atgacactca agcgatttct 960
aacataagct cgctatataa ttacaatata gtagcgaata aatctttttt gaaatcgcat 1020
ttgacttatc ttgattacat caaagacaag cttaaggggc aaaaagatag ctacttaaca 1080
gaaagggtgc agactaaaat aatcgtgaag tga 1113

<212> Type : DNA
<211> Length : 1113
SequenceName : SEQ ID 504
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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tttatcaata atcttcaagt ggcttttatt aaagttgata atgttgtcgc ttcatttgat 120
cctaatcaaa aaccaatcgt tgataagaat gatagggata ataggcaagc ttttgagaaa 180
atctcgcagc taagggagga attcgctaat aaagcgatca aaaatcctac caaaaagaat 240
cagtattttt caagctttat cagtaagagc aatgatttaa tcgacaaaga caatctcatt 300
gatacaggtt cttccataaa gagctttcag aaatttggga ctcagcgtta ccaaattttt 360
atgaattggg tgtcccatca aaacgatccg tctaaaatca acacccaaaa aatccgaggt 420
tttatggaaa atatcataca acccccctatc tctgatgata aagagaaagc ggagtttttg 480
aggtctgcca aacaagcttt tgcaggaatt atcataggaa accaaatccg atcggatcaa 540
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gagcctaatg gagatcctac tggtggggat tggcttgata tttttttatc atttgtgttt 660
aacaaaaaac aatcttccga tctcaaagaa acgctcaatc aagaaccagt tcctcatgtc 720
caaccagatg tagccactac caccactgac atacaaagct taccgcctga agctagggat 780
ttgcttgatg aaaggggtaa tttttctaaa ttcactcttg gcgatatgaa catgttagat 840
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<212> Type : DNA
<211> Length : 3504
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SequenceDescription :

Sequence

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<212> Type : DNA
<211> Length : 783
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SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
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<212> Type : DNA
<211> Length : 3657
SequenceName : SEQ ID 507
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :

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<212> Type : DNA
<211> Length : 4884
SequenceName : SEQ ID 508
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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gaatcaggat ctgccgcttt agtaacacta aagacaacag atagtcaaaa aagcacaaac 2340
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ttaactagtg atgtagaaac taaagcatct agtttaatca ccaaatgagg tgcaacaccc 2460

caaattggta gtcagttctc cgaaattgtt tcgctcaaga gtaaggacaa taagccccag 2520
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ccaaagccgc accactcacc aaggactcga gtgtcaagac tttgagctat gtcattcaga 3840
ttaccaacga ggacgttaac aaaatttctg ctagttgaaa aactgataag aacagtgctt 3900
tag 3903

<212> Type : DNA
<211> Length : 3903
SequenceName : SEQ ID 509
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
atgaaaaaac ttctaataaa accccagttt tgattcttaa cccttggtgg ctttatctct 60
tcaagtgtta ttttagttgc ctgtgctacc ccttccaatt cagcactcca aactgttttt 120
aaagcacgtt cgaaccagtt cttcaacggg gaacagggta gtttacaaaa cgctttagcc 180
actgctttaa aagatccaga ggccaacaaa cagtttgtcg ctgctcccct tttaaaggca 240
ttgacagctt ggtatgaaaa taaccaagac aaacaggtca cccagttctt taaagacacc 300
aaaaagagtg ttgatgagca atacaaccaa gccgtagata aggtggtatc ggctagccga 360
aacaaaaacc tctttgtcca acaagacttg ctggatagcg ccgggggggt tagaaacttg 420
aaaagcccag aagttgtttg aacagctcat taa 453

<212> Type : DNA
<211> Length : 453
SequenceName : SEQ ID 510
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
atgcaacagc aaggagaaac taaagatcaa tataacactt ttggcctgag acttgtgcgt 60
aacagtgttg gcgtatcagt tttaggactt gatggttttg ttaaattcat aaaaggcggt 120
agcggaggta gcaatggcgg ttctagtagt gccaaaaaga ttgataaaga agagcaaaag 180
aaattcttaa agttccgtgc ttttcaagcc aaaattggca cattttataa cactaacttt 240
gcctttagtt ttcccctaaa cgaaacttta aaaggttggt ttgacaaaca ccgcggattg 300
atcttagcga acgccttagt taaagttact ttagacacaa aggaaaaagc aagtaaggcc 360
ttagtggatg cttttagttc ttataaaaac tgattgagtg aatacacccc ggttggttta 420
gctaccacca tgattagctt ttattttgac caaatgaaag ctctcaacaa taagctgtta 480
gaacgagtac ggagcttaaa ccaaaatgtt aaccaagcca atcctacccc ttggttaaat 540
gggttatcgg ctaaactacc ttacgttaac actaacggta attacgaaaa gttaaacaac 600
tactttacct ttttaattac caaagttttg tgacctaagg tgggcactga ggatactaat 660
gtcagtgaag aaaaaagcaa actcaaaact aaaactgaag atgttaacaa gattagggaa 720
aagattttga acaacatcga cagtaagctc aaaacttttg tccaaaaact caaacctacc 780
ttagcacccc gaccagctta cagtaacgta atcttgttaa acattaacaa tgataaggtg 840
tggtctgctg gcgctaattg aagtttggca gttttactag atccgaaaaa ggttaacccg 900
ctttcgttta tgttgctcaa acaaatgttt gatcaaaaca gtttgtttaa aaaagcaaag 960

actttattcg aaaacattca aaataaagca aaaactagtg gaagtggtaa aagtggtaca 1020
accaccaacg atgatgccga tgctttgagc aaagtcattg gcaactatta ctacaacact 1080
tgagctaagc taaccgataa atcaatttat ggcaaccttа aggatgacaa atttgatgat 1140
ctctttaaat tggcttttga cagtagtatt aacgaaaagt cctttaatgt agattataag 1200
gcagtgattg aacactaccg ctttatctat accttagagt ggttggtaga caaaaacctа 1260
aagaacttca aggatttatt aaaggcaaac ctcaagtttg gtgaaattgc ttttattgct 1320
tacaagaata ctgaaacgca gaacttctct aacccgcaag gtatattcgg ttcttacttt 1380
aattacgaaa acgaaacgaa tgcggctaag agtgctacgc aaattataga ccccaacagt 1440
ttcttctata aaaccaccac taaaccagaa gcgaaaacca ctcaaagtgc taatacagct 1500
gtgatggttc aaaatacgca gatgaacaat cagcaaacta acagttatgg ctttactggt 1560
ttgagtacca gtagtggttc gatgttaggt gctgctaccc agcaagccat tttggatcaa 1620
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gaaactaaaa atcaattatt attagaccga attgccaacc aactaatagc cttaaaaccg 1740
aatacaagtg gcaacagtgg tacccaaaaa acaattgctg catacttcca aacagatgcg 1800
gttggcaatc ctactttgga ctttaaagcg aagcaaaaac tcttattgga tgttttagat 1860
caatacaaag atttctttgg taataatgca caagcagttc aaagagattc tggtaagagt 1920
ggaactggca actatttaac ctataccgac ggtagtgata agatcactta tttgcagttt 1980
tcctataaag atattgacgg tttaagtttg agtagttcaa acggaactag cagcaaattt 2040
gccagtgatg ttgtagcagc gcttttatta ttccaggcag cctataaagg tactcaacaa 2100
ctggctttaa gttccatcaa taaaccacaa ttaccaattg gcgataaacg cataaaaaca 2160
gggatcgatt tactgaaata g 2181

<212> Type : DNA
<211> Length : 2181
SequenceName : SEQ ID 511
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
atgaagagtt ttttaagaaa acccaagttt tgacttttat tgttgggtgg cctttccact 60
agtagtatta ttctcagtgc ctgtgcaaca ccttcaaact cagcactgca agcagttttt 120
aaaccaactt ccaaccaatt ttttaacggt gagcatggta ccattcaaag cgctttaaac 180
accgctttaa gagatccgga aactaacaaa aaatttgtag ctgctccact tttaaaagca 240
ttagaagctt ggtacgagaa taatcaagat aaaaacatta ctcaattctt aaaagacacc 300
aagactaatg ttgataacca atacaaaacc gttgtagata aagtagtttc agcaccacgc 360
aataaatcct tatttgtaca acaagattta ttggacagta gcggtggtag tgaggccact 420
tgaaaagcgc gcaaactgtt tgaacagcta attagtgatt ttgcttcacg agttttтcaa 480
aagaattatt tgtcttataa ggaaaatggc aaagtatcag ccggtccgtt tttatacgac 540
acgatttcaa aaaatagtaa ttgacagaat atagtttttg atgctgttaa ttttccagaa 600
actaatgatg atttttтcgc gaagattcaa agcgaagttt ttgatcaatg ggctgagtac 660
accgatccaa ctattattag ctcagttacc ttaaagtatt cagctcctaa ttaa 714

<212> Type : DNA
<211> Length : 714
SequenceName : SEQ ID 512
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
atgattaact tcttgtttaa ccaaatgaac gcgttgaaca ataagttttt ggagcgcgct 60
aaagcattaa accaaaatgt gaatcaggcc aatcctacac cttggttaaa tggtttatca 120
gctaaattgc cttatgttag aacaaatggt aattacgaaa aactcaacaa ttacttcact 180
ttcttaattg ttaaatacat gtggaagaag gtcggtaatg aagacgcttc attatctaaa 240
gatagtagca ttaacaagct caaaactaag accgaagacg ttaacaaaat tagagataaa 300
atcttagaag acattcaaaa gaaggttcaa gaatttgtta aaaacaagct taaaccaacc 360
ttagcaccac gacaaactta cagtaatgta attttgttaa acgttaacaa cgataaggtt 420
tgatcgatgg gcgccaattg agctttagct aacttattgg atacgagcaa aattaatcca 480
ctttcattta tgttgctcaa acaaacgttt gaccaaaacg acttgtttaa gaaagctaag 540
aaacttttg aagatattca aagtaaaaca aatggtggaa gttcaggtgg gatgcaaggt 600
agcaatacct cgagtagtga aggagctgat gccttgagta aagtaattgg caactattac 660
tacaacagtt gagctaaatt gactgataaa tccatttatg gaaatcctaa ggacaacaaa 720
tttgatgact tatttaaatt agcttttgaa gatagtatta acgaaaagtc ctttaatgtt 780
gattacaaag cggtcattga acactaccgc tttatctata ccttggaatg actagttaac 840
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ccaaataatt tcttttataa aacaactacc aaaccagaag aagttaaaac cgcacaaaat 1080
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gccattttgg atcaaataac caagaattcc ttgcaacaat atggttcgca gcaagaactg 1260
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caaagagatt ctggtaaagg tggacatgga agctattcaa cttaccaaga tggcagtgac 1560
aagatcactt accttcagtt ctcctataaa gatatagata acttaagttt gagtgataaa 1620
ggaaatagta agcttgctag cgatgttgtg gctgcccttt tacttttcca agcagcggat 1680
aaaggtaccc aacaattagc cttgagtgct attaattaa 1719

<212> Type : DNA
<211> Length : 1719
SequenceName : SEQ ID 513
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :

atgaaaaagt ttctaagaaa accccaattt tgactcttaa cattaggcgg ttttctgtct 60
actagtgtta ttttagctgc ttgtgctacc ccttccaact cggctttaca aaccgttttt 120
aaagcgcgtt ccagtcagtt tttcaatggt gaacagggta gtttacaaag tgccctaaca 180
acggctttaa aaaatccagt ggccaacaaa caatttatcg ctgcaccact tttaaaagca 240
ctagaagctt ggtacgaaaa caacgaagac aaaaagatta cccagttttt aaaagacact 300
aagtccaatg ttgacagtca gtacacaacg gcagtcgata aagtggtatc agcatcacgc 360
aataaatcac tttttgtgca acaagatttg ttggataacg ccggtggtag tgaagcaacc 420
tggaaagcgc aaaagctgct tgaacagctc attagtgact ttgctagtcg ggttttccaa 480
aagaactacc tcaattacaa aaaagatgga caagtttcta ctggtccatt tacttatgat 540
gaactacaca aggaagaaag ctgaaaaaac tttgaattta gtgccccacg ttttagtgaa 600
actaatgatg actttttcgc caaaattcaa agccaagtat ttgaccaatg ggtggagtac 660
actgatccca ctttaattag tcaagttaac tataagtatt ctgctcccag tcaagggtta 720
ggtcagatct ataacagaga gaagttaaag gataaactaa caccttctta tgcctttcct 780
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ggcaactacc tcacttacca aaatggtagt gacaagtaca cctacaccca gttcacttac 3540
caagacattg acagcttgag tctaacaact acaagcggta ccaacaataa aattgccagt 3600
gatgttgtgg cagcgctgct tttattccaa gcagcagaca agggcacaca acagttggca 3660
cttagtgcca ttaataagcc gcagttaaat attggtgata aacggataga aagtgggtta 3720
aaattgctca aatag 3735

<212> Type : DNA
<211> Length : 3735
SequenceName : SEQ ID 514
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
atggttggaa gtggtgcggc tggaagtgct tctagtttac aaggcaatgg ctcgaacagt 60
tcggggttaa aatcgctctt gagatcagca cctgtcagtg ttccaccaag cagtacaagt 120
aatcaaactt taagcttatc taaccccgct cctgtaggcc cacaagcggt tgtaagccaa 180
cccgcggggg gtgctacggc agcagtgtcc gtcaatcgca cagcgagtga caccgccacc 240
tttagcaagt acctcaacac cgcccaggcc ttgcaccaga tgggggtgat tgttccgggg 300
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tccactaacc tgccccatgc ggcaggtgct tcccaaacgg gtttgggaac tggttcgccc 420
cgcgaaccag ctttaaccgc aacgtcacag cgtgccgtca cggtggttgc tggccccctt 480
cgtgcgggca atagcagtga aactgatgcc ctaccgaatg tcatcaccca gctctatcat 540
acttcaaccg cccaactcgc ttacttaaat ggccagatcg ttgtgatgag ttccgcccgg 600
gtaccgagtc tttggtattg agttgtcggg gaggaccagg aatcgggcaa agcgacctga 660
tgagcgaaaa ccgagctcaa ctggggcacc gacaagcaga agcagtttgt cgaaaaccag 720
ttggggttta aagatgactc aaattcggat tccaaaaatt cgaatttgaa gacccaaggc 780
ctcacccaac ccgcctacct catcgccggt cttgacgttg tggccgacca cctcgtcttt 840
gcggcattta aagcgggcgc ggtggggtat gatatgacga ctgattcgaa cgcttcgacc 900
tacaaccaag cactcgtctg gtcgaccacg gccgggttgg acagtgatgg ggggacaagg 960
ctttggtag 969

<212> Type : DNA
<211> Length : 969
SequenceName : SEQ ID 515
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
atgccagttt ttctaaaatt aacgcacaca attagaaaag tgctaagagt tgcaagactt 60
tctagactag cattactatc actaaccgct gttatttta gcggttgtgc caatattaat 120
ttaattagtg ctgttggttc ttcttcggta caaccgttgt taagcaaact cagttcgcac 180
tatgtcttga accacaatga caaggataac cttgtagaaa ttagtgtcca agcgggtggc 240
tctagtgctg gggtgaaagc aatcaccaag ggactagctg acattggtaa tgtctcgaaa 300
aacaccaaga gctatgctga ggaaaacaag cagttgtgga tggacaaaaa gctcaaaaca 360
attacacttg gcaaagatgc cattgctgtt atttataaag caccatcaga gtttaagggc 420
aaactagttc tcactaaaga caacctcaac gatctttacg atctgttcgc tggtagcaaa 480
agcgttgaca ttaataagtt tgtcgaaaac ggacaaacca ctaaaaacag taatcataat 540
ttgataggct tcccccgtac tgggggcgct tttgcttctg gtaccgctga agctttcttg 600
aagttttcgg gtcttacaca gacaaaaact ttagataaag attccaaaga aattttggaa 660
ggtcaacgca actatggccc caatgcgcga ccaactagtg aaaccaacat tgaggccttt 720
aataccttg tcacaacttt gcgacaaccc aatttatacg gcatggtgta cctcagttta 780

gggtttgtga ataacaacat gaacctaatt aagagtgaag gttttgaggt tttaaaagtc 840
aaatatgata ataacgcagt tacccctcc agtcaagcag tttctagcaa cacttacaaa 900
tgggtacgcc cgttgaactc agtggtttcc ctgttaccaa aacaaaaaac actgccaagt 960
atccaacgct tttttaactg attgttattt agcaacaaca gtgaaattaa gaaaatatac 1020
gatgactttg gtgtgttaga gttaacggct gacgaaaaga aaaagatgtt taaaacaggt 1080
aatgcagaaa tgagcaacat tgccaacttc tgggttgatg attacagtct gaacaaccaa 1140
accttcggtg cactctag 1158
<212> Type : DNA
<211> Length : 1158
SequenceName : SEQ ID 516
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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ttggcgccga tgctggacgc ggcggccgct tgggatggac tggccgacga attgggttcg 120
gccgcggcct cgttttcggc ggtgacggcg gggctggcag gttcctcgtg gctgggcgcg 180
gcgtcgacgg cgatgacggg agcggccgcc cctatctgg gctggttgag cgcggcggcg 240
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
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<212> Type : DNA
<211> Length : 4983
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SequenceDescription :

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<213> OrganismName : Mycobacterium tuberculosis H37Rv
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<212> Type : DNA
<211> Length : 4146
SequenceName : SEQ ID 522
SequenceDescription :

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<213> OrganismName : Mycobacterium tuberculosis H37Rv
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
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<212> Type : DNA
<211> Length : 3240
SequenceName : SEQ ID 529
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
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<212> Type : DNA
<211> Length : 4617
SequenceName : SEQ ID 530
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 2772
SequenceName : SEQ ID 531
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :

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<212> Type : DNA
<211> Length : 2250
SequenceName : SEQ ID 532
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 2562
SequenceName : SEQ ID 533
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv

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<212> Type : DNA
<211> Length : 1857
SequenceName : SEQ ID 534
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
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<212> Type : DNA
<211> Length : 3162
SequenceName : SEQ ID 535
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :

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<212> Type : DNA
<211> Length : 1848
SequenceName : SEQ ID 536
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 2964
SequenceName : SEQ ID 537
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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ggcgagccgg gggcgaacgg gtag 2304
<212> Type : DNA
<211> Length : 2304
SequenceName : SEQ ID 538
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 2196
SequenceName : SEQ ID 539
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :

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<212> Type : DNA
<211> Length : 1065
SequenceName : SEQ ID 540
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :

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gggttgccgt ag 2352

<212> Type : DNA
<211> Length : 2352
SequenceName : SEQ ID 541
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :

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gctgcggctg ccgatgaagt gtcggcggcg attgcggggt tgttcggggc ccatgctcgg 180
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<212> Type : DNA
<211> Length : 2085
SequenceName : SEQ ID 542
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 2514
SequenceName : SEQ ID 543
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :

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aacggcggca acggcggcaa tgccggaaaa gccgggggca cggcgggtgc cggcggcgcc 2700
ggtgggctgg tactcggccg ggatgggcag cacggcttga cgtag 2745

<212> Type : DNA
<211> Length : 2745
SequenceName : SEQ ID 544
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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atcgggtcat cgatcggtgt agccaacagc gcggcggcgg ggtcaaccac cagcgtgctg 120
gccgcgggcg ccgatgaggt gtcggcggcg atcgcgacgc tgtttggcag ccatgctcgg 180
gagtatcagg cgatcagcac gcaggtggca gcgtttcatg accgatttgc gcagacgtta 240
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ggcggggccg ccgggttgtt cggcaccggc ggggccggtg gggccggtgg ggccggcgcc 540
gccggtgggg ccgggggtag cggcggctgg ctgctgggca atggtggagt cggcggggcc 600
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ggtctcacgg tatttggcga caatggcggc gccggcgtcc tcggcgactc gacggaccca 2160
gatggcagcg gcggtgctgg tggcgcgggc ggcgccggtg gcgccggtgg cgatccaacc 2220
atctga 2226

<212> Type : DNA
<211> Length : 2226
SequenceName : SEQ ID 545
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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atcggcacat cgctgagtgc ggcaaacgcg acggcagcgg cgtccacgac ctcggtgctg 120
gcggccggag ccgacgaggt atcgcaggct atcgcaaggc tgttcagtga ttacgccacg 180
cactatcagt cgctgaacgc tcaagccgcg gcatttcatc acagcttcgt gcaaacgttg 240
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gtcattgcca acggctcctt tgccccgtcg ttcgtcggct tcggcggcaa cggcggcaac 1560
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ggaccgtcgt ag 1632

<212> Type : DNA
<211> Length : 1632
SequenceName : SEQ ID 546
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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atcggctcga cgttgagcgc ggccaatgcc gcggcgctgg ccccgaccac cggagtgctg 120
gccgcgggcg ccgacgaggt gtcggcagcg gtggcgtcgc tgttttccgg gcacgcccag 180
gcctatcaga cactcggcac gcaggcggcc gcgtttcatg aacggtttat ccaggccttg 240
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gcgttgaatg tgatcaacgc gcccacgcag acgctgctcg ggcgcccgct gatcggcaac 360
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agcgccggcc aacccggcta a 1821
<212> Type : DNA
<211> Length : 1821
SequenceName : SEQ ID 547
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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atcggctcgg cgatcagcac ggccaatgct gcggccgcgg ccgccacgac gcgtgtgctg 120
gccgccggtg ccgatgaggt gtccgccgcc gtggcggcgc tgtttagcgg ccacgcgcag 180
acctatcagg cgctgagaac tcaggcggcg gcgtttcacc agcagatcgt gcagaccctc 240
acgagcacgg caggcgcgta tgccagcgcc gaggccgcca acgtcgagca gcagctgctg 300
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gacggggcgc cggggaccgg gcaggccggc ggggccggcg ggatcctgta cggcaacggc 420
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accggcgggg ccggcgggca cagcgcccag gggcccgacg gcaatggcgg aattggtggt 1320

gccggcgggg ccggtggcaa cggcggacaa ctctacggca ccggcggcac cggcggcacc 1380
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aacgatggca cccccggcaa cggcgggggc ggcggcgtcg gcgggaccgg gggaaccctg 1680
ttcggccagc ccggccaacc cggtccgccc ggccagcccg gccccgccta a 1731

<212> Type : DNA
<211> Length : 1731
SequenceName : SEQ ID 548
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 1920
SequenceName : SEQ ID 549
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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acgcgcgggtg ccgatgaggt gtcgacagcg attgcggcgt tgttcggtgc ccaaggccag 180
gcctaccagg cggcgagcgc acaggcggcg gcgttttacg cccagttcgt gcaggccctg 240
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atgtag 2406

<212> Type : DNA
<211> Length : 2406
SequenceName : SEQ ID 550
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 1305
SequenceName : SEQ ID 551

SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
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<212> Type : DNA
<211> Length : 1659
SequenceName : SEQ ID 552
SequenceDescription :

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<213> OrganismName : Mycobacterium tuberculosis H37Rv
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<212> Type : DNA
<211> Length : 1086
SequenceName : SEQ ID 553
SequenceDescription :

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<213> OrganismName : Rickettsia prowazekii strain Madrid E
<400> PreSequenceString :

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<212> Type : DNA
<211> Length : 7023
SequenceName : SEQ ID 554
SequenceDescription :

Sequence

<213> OrganismName : Rickettsia prowazekii strain Madrid E
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<212> Type : DNA
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<213> OrganismName : Porphyromonas gingivalis W83
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<211> Length : 6318
SequenceName : SEQ ID 556
SequenceDescription :

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<213> OrganismName : Porphyromonas gingivalis W83
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<212> Type : DNA
<211> Length : 6615
SequenceName : SEQ ID 557
SequenceDescription :

Sequence

<213> OrganismName : Porphyromonas gingivalis W83
<400> PreSequenceString :
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aatccggaag acctgatcgc acagagccgt tggcaatcgc aaagagatgg ccggcccgtc 240
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tag 2823

<212> Type : DNA
<211> Length : 2823
SequenceName : SEQ ID 558
SequenceDescription :

Sequence

<213> OrganismName : Porphyromonas gingivalis W83
<400> PreSequenceString :
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gcatttgcgc agcagacaga gttgggacgc aatccgaatg tgagattgct cgaatccact 120
cagcaatcgg tgacaaaggt tcagttccgt atggacaacc tcaagttcac cgaagttcaa 180
acccctaagg gaatggcaca agtgccgacc tatacagaag gggttaatct ttctgaaaaa 240
gggatgccta cgcttcccat tctatcacgc tctttggcgg tttcagacac tcgtgagatg 300
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tactcgcaaa acaaattctt cccgggagag atcgccacgc ttgatgatcc ttttatcctt 480
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aatattctga acaagaaagg tacatttgcc ggctttgaag acacatacaa gcgcatgttc 660
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gagaaactcg ctatcaagta a 5121

<212> Type : DNA
<211> Length : 5121

SequenceName : SEQ ID 559
SequenceDescription :

Sequence

<213> OrganismName : Porphyromonas gingivalis W83
<400> PreSequenceString :
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cacccggcct cagcacagaa agttcctgca cccgtcgatg gcgagcgcat tatcatggag 120
ctaagtgaag ccgatgtgga gtgtacaatc aaaatagaag ccgaggatgg ctatgccaac 180
gacatttggg cagacctcaa cggaaacggc aagtacgatt cgggggagag gctcgattca 240
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gaaatacagc tcccgagagg tgcagcctat gtagtacgta tcggcagcca tgcgatcaaa 1440
accgcgatgc cgtaa 1455
<212> Type : DNA
<211> Length : 1455

SequenceName : SEQ ID 560
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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tcattcgcct gtaaaaccgc caatggtacc gctatcccta ttggcggtgg cagcgctaat 120
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agtagctatc catttccgac caccagcgaa acgccgcggg ttgtttataa ttcgagaacg 360
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gatgattttc agtttgtgtg gaatatttac gccaataatg atgtggtggt gcccactggc 540
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ggagggcagg tgactgcagg gaatgtgcaa tcgattattg gcgtgacttt tgtttatcaa 900
taa 903
<212> Type : DNA
<211> Length : 903

SequenceName : SEQ ID 561
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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tccccctgc tgatagctgc tgatacagga agtcaatatg gcaccaatat tactattaat 180
gatggtgaca gaattacagg agataccgcc gatccatcag gaaacctcta tggtgtaatg 240
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aacgacgcct ctggatatgc aaaaggaatc attattcagg gcaaaaacag ctccctgaca 360
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agtgcacagt ataacaaaca gcacacattc tatctcgaag cggattacac gcagggtaac 2820
ctctttgatc agaagcaagt caacggagga tatcgcttca gctttaa 2868

<212> Type : DNA
<211> Length : 2868
SequenceName : SEQ ID 562
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 24 57T
<400> PreSequenceString :
atgagtaagt ttgttaaaac agctattgct gcggcaatgg tgatggggcgt gttcacctct 60
acggcaacaa tcgctgcggg taacaacggt actgcacgtt tttacggcac cattgaagac 120
tcagtgtgtt ctatcgttcc ggacgatcac aaactggaag ttgatatggg tgatatcggt 180
gccgaaaaac tgaaaaataa cggcaccacc acgccgaaaa gtttccagat tcgtctgcaa 240
gattgcgtat ttgatactca ggaaacaatg accactacct ttactggtac cgtttcttct 300
gcaaatagcg gcaattatta caccattttc aataccgata ccggtgcggc atttaacaat 360
gttagcctgg cgatcggtga ctctctgggt acctcttaca aaagcggcat gggtattgac 420
cagaaaatag tgaaagacac ttctaccaac aaaggcaaag cgaagcagac actgaacttt 480
aacgcctggc tggtcggcgc agctgatgcg ccagatctgg gtaatttga agcaaatacc 540
accttccaga ttacttacct gtaa 564
<212> Type : DNA

<211> Length : 564
SequenceName : SEQ ID 563
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgaaaatta aaactctggc aatcgttgtt ctgtcggctc tgtccctcag ttccgcagcg 60
gctctggccg atactacgac ggtaaatggt gggaccattc actttaaagg ggaagttgtt 120
aacgccgctt gcgcagttga tgcaggctct gttgatcaaa ccgttcagtt gggacaggtt 180
cgtaccgcta gcctgaagca ggctggagca accagctctg ccgttggttt taacattcag 240
ctgaatgatt gcgataccac tgttgccaca aaagccgctg ttgccttctt aggtacggca 300
attgatgcta cgcgtactga tgtactggct ctgcagagtt ctgctgcagg tagtgcaaca 360
aacgttggcg tgcagatcct agacagaaca ggcaatgctc tgacgctgga cggtgcgaca 420
tttagtgcac aaacaaccct gaataacggt accaacacca ttccgttcca ggcgcgttat 480
tatgcaatcg gcgaggcaac cccgggtgca gctaatgcgg atgcaacctt caaggttcag 540
tatcaataa 549
<212> Type : DNA
<211> Length : 549
SequenceName : SEQ ID 564
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atggcaagta tttcatcgct gggagtcggg tcaggtctgg atttaagttc aatccttgat 60
agcctcaccg ccgcgcaaaa agcgacgcta acccctattt caaatcagca atcgtcgttt 120
accgctaaac ttagcgccta cggtacgctg aaaagcgcgc tgacgacttt ccagaccgcc 180
aatactgcat tgtctaaagc cgatcttttt tccgccacca gcaccaccag cagcaccacc 240
gcgttcagtg ccaccaccgc gggtaacgcc atcgccggga aatacaccat cagcgtcacc 300
catctggcgc aggcgcaaac cctgaccacg cgcaccacca gagatgatac gaaaacggcg 360
atcgccacca gcgacagcaa actcaccatt caacaaggcg acgacaaaga tccgattacc 420
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aaagcgggcg taagtgcgag catcattaac gtgggtaacg gtgaatatcg tctgtcagtc 540
acatcaaatg acaccggcct tgataatgcg atgacactct cggtcagcgg tgatgatgcg 600
ctacaaagtt ttatgggcta tgacgccagt gccagcagca acggtatgga ggtctcggtc 660
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attcagacgc agttgaagtc gatgctgagt aataccgtca gttcttccag ctataaaacg 1020
ctggcgcaga ttggtatcac gaccgatccc agcgatggca aactggaact ggatgccgac 1080
aaactcaccg ctgcactgaa aaaagatgcc agcggcgtag gtgcattgat tgttggcgat 1140
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acgggcatta ttaaagccgc taccgatggc gttagtaaaa ccctgaataa gttaactaaa 1260
gactacaacg ccgccagcga tcgcattgat gcgcaggtcg cgcgctacaa agaacaattt 1320
acccaactgg acgttttaat gacctcgtta aacagcacca gcagctactt aacgcagcag 1380
ttcgaaaaca acagtaattc caagtaa 1407
<212> Type : DNA
<211> Length : 1407
SequenceName : SEQ ID 565
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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ggacacacag ccactaatac ccgcgtggat gatggcggaa cgctggatgt ccgcaacggt 120
ggcaccgcca ccaccgtatc catgggaaat ggcggtgtac tgctggccga ttccggtgcc 180
gctgtcagtg gtacccggag cgacggaaag gcattcagta tcggaggcgg tcaggcggat 240
gccctgatgc tggaaaaagg cagttcattc acgctgaacg ccggtgatac ggccacggat 300
accacggtaa atggcggact gttcaccgcc aggggcggca cactggcggg caccaccacg 360
ctgaataacg gcgccatact tacccttccc gggaagacgg tgaacaacga taccctgacc 420

atccgtgaag gcgatgcact cctgcaggga ggcgctctca ccggtaacgg cagcgtggaa 480
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ctgaatgaag gcacgctgac gctgaacgac agtaccgtca ccacggatgt cattgctcag 600
cgcggtacag ccctgaagct gaccggcagc actgtgctga acggtgccat tgaccccacg 660
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gtggtggatg acctcagcca tgccggacag attcatttca cctccacccg cacagggaag 780
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aacgcctccg gcctgtgggc tgacattgtg gcccagggaa cccgccacag catgaaagcc 1560
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aaaggcacct catcccgtga caccctgcgc ggcagtgcca aacacagtgt gcgtgaactg 1860
ccggtgaact ggtgggtaca gccttctgtt atccgcacct tcagctcccg gggggacatg 1920
agcatgggta cagccgcagc cggcagtaac atgacgttct caccgtcaca gaatggtacg 1980
tcactggacc tgcaggccgg actggaagcc cgtgtccggg aaaatatcac cctgggcgtt 2040
caggccagtt atgcccacag catcaacggc agcagcgctg aaggttataa cagtcaggcc 2100
acactgaatg taaccttctg a 2121

<212> Type : DNA
<211> Length : 2121
SequenceName : SEQ ID 566
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atggcctttt ctcaagcggt tagcggatta aacgctgccg ccaccaacct cgatgttatt 60
ggcaacaata tcgccaactc cgccacctac ggctttaaat caggcacggc ctcttttgcc 120
gatatgtttg ccggttcgaa agtgggactg ggggtaaaag ttgccggtat cactcaggac 180
tttaccgatg gcacgaccac caacaccggg cgaggtctgg acgttgctat cagccagaac 240
ggtttttttcc gtctggtaga cagcaacggt tcggtgttct acagccgtaa cggacaattt 300
aagctggatg aaaaccgtaa cctgttgaat acgcaaggtt tacagctgac gggttacccg 360
gtaaccggta cgccgccgac tattcagcaa ggggcgaatc cgaccaatat ttcgatcccg 420
aataccctga tggcagcgaa aactaccacc acggcgtcga tgcagatcaa cctgaattcc 480
agtgatccgc ttcctactgt tacgccattc agcgccagca atgcggatag ctataacaaa 540
aaaggttcgg tgactgtttt cgacagtcag ggtaatgctc atgacatgag cgtctatttt 600
gtgaagaccg gggataataa ctggcaggtc tacacccagg atagcagtga tccaaacagc 660
attgcgaaga cagcgacaac actggaattt aatgctaatg gcacattagt ggatggtgcg 720
atggcgaata atatcgcaac cggcgcaatt aacggtgcag aacccgccac gtttagtctg 780
agcttcctca actccatgca gcaaaatacc ggcgctaaca acattgtggc aaccacccag 840
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ggcaacaatt ccaacgaaca aacccaactg ctggggcaga ttgtactggc gaactttgcc 960
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gtggcgctgt tggggacagc cgggacggga aactttggca ctctgaccaa cggtgcgctg 1080
gaagcgtcca acgtcgatct cagtaaagaa ctggtcaata tgatcgttgc ccagcgtaac 1140
tataagtcta acgcccagac catcaaaacc caggaccaga tcctcaacac gcgggttaac 1200
ttacgctaa 1209

<212> Type : DNA
<211> Length : 1209
SequenceName : SEQ ID 567
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T

<400> PreSequenceString :
atgaaactcg tgcacatggc cagtggttta gcggttgcga ttgcgttggc ggcttgcgca 60
gataaaagcg cggatattca gacgccagcc ccggctgcaa atacgtctat ttcagcaaca 120
caacaacctg ctatccagca accgaatgtc tccggtactg tctggatccg tcagaaagtc 180
gcactgccgc ctgatgctgt gctgaccgtg acactttctg acgcgtcgtt agccgatgca 240
ccgtcaaaag tgctggcgca gaaagcggtg cgtactgaag gtaaacagtc accattcagc 300
tttgttctgc catttaaccc ggcagatgtt cagccgaacg cgcgtattct gttgagtgcg 360
gcgattaccg tgaatgacaa actggtattt atcaccgata ccgttcagcc ggtgatcaac 420
cagggcggaa ctaaagccga cctgacattg gtgccggtac agcaaaccgc cgtgccggtt 480
caggccagcg gtggcgcaac gactaccgta ccttcgactt caccaactca ggtgaatccg 540
tcttcggcag ttcccgctcc tacgcaatat taa 573
<212> Type : DNA
<211> Length : 573
SequenceName : SEQ ID 568
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgatcataa aaaaaagcgg tggtcgctgg cagctaagcc tgctggcgag cgtggtaatc 60
agtgcctttt ttctcaacac agcttacgcc tggcaacaag aatatatcgt tgatacgcaa 120
cccggacatt ccacagagcg ttacacctgg gatagtgatc atcaacctga ttacaacgat 180
attttgtcgc aacgtattca aagtagccaa agggcgctgg gactggaagt caatctggcg 240
gaagaaactc ctgtggatgt gaccagcagt atgagtatgg gctggaattt tcctttatat 300
gaacaggtta caaccggccc ggtcgcggca ttacattacg atggcacaac cacctcgatg 360
tataacgagt ttggcgacag tactaccacg ctgaccgatc cgttatggca tgccagcgtg 420
agtagcttag gctggcgtgt tgactcccgg cttggcgatc tccgaccctg ggcgcaaatc 480
agctataacc agcaatttgg cgagaatatc tggaaggcgc aatcaggcct gagccggatg 540
acggcgacaa accagaacgg caactggctg gatgtcaccg taggcgctga tatgttgctc 600
aatcaaaata ttgccgccta tgctgcgcta actcaggcag aaaataccac taataatagc 660
gactatctgt atacgatggg ggttagcgcc agattttaa 699
<212> Type : DNA
<211> Length : 699
SequenceName : SEQ ID 569
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgaaatggt gcaaacgtgg gtatgtattg gcggcaatgt tggcgctcgc aagtgcgacg 60
atacaggcag ccgatgtcac catcacggtg aacggtaagg tcgtcgccaa accgtgtacg 120
gtttccacca ccaatgccac ggtagatctc ggcgatcttt attctttcag tcttatgtct 180
gccggggcgg catcggcctg gcatgatgtt gcgcttgagt tgactaattg tccggtggga 240
acgtcgaggg tcactgccag cttcagcggg gcagccgaca gcaccggata ttataaaaac 300
caggggaccg cgcaaaacat ccagttagag ctacaggatg acagtggcaa cacattgaat 360
actggcgcaa ccaaaacagt tcaggtggat gattcctcac aatcagcgca cttcccgtta 420
caggtcagag cattgacggt aaatggcgga gccactcagg gaaccattca ggcagtgatt 480
agcatcacct atacctacag ctga 504
<212> Type : DNA
<211> Length : 504
SequenceName : SEQ ID 570
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgaaaagag cgcctcttat aacaggactt ttgttgatat ccacatcctg cgcttatgcc 60
tcctcaggag ggtgtggagc cgacagcact agcggtgcga caaattacag cagtgtggtt 120
gatgatgtta cggtgaacca gacagataac gtgacaggac gggagtttac ctctgcaacg 180
ctaagtagca ctaactggca atacgcctgt tcctgctctg cgggtaaggc agttaaactt 240
gtctatatgg tcagccccgt acttaccacc actggacatc agacaggata ttacaaactc 300
aatgacagcc tggatattaa aaccacatta caggcaaacg acattccagg actcacaacc 360
gaccaggttg tctctgttaa cacccgattc acacagataa aaagcagcac cgtatattct 420
gctgcaaccc aaacgggtgt ttgccagggt gacacgtctc gttatggacc cgttaatatt 480

ggtgcaaata ccacctttac cctgtatgtc accaagccat ttctcggctc gatgaccatt 540
ccgaaaacgg atattgccgt cattaaaggc gcgtgggtcg atggaatggg aagcccgtct 600
acaggtgact tccatgattt agtcaagtta tcgattcagg gaaatctcac cgccccacag 660
tcgtgcaaaa ttaatcaggg cgatgttatt aaagttaatt ttggattcat caatggtcag 720
aagtttacca cccgcaatgc catgccagac ggttttactc cagtagactt tgatatcact 780
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gatgtcggta ttcgtattga aaatctcggc ggcggagttg caaatattcc ttttcagaac 960
ggtatccttc ccgttgatcc ttccgggcat ggcaccgtca atatgcgcgc ctggccagtt 1020
aatctggtcg gtggtgagct ggaaacagga aaatttcagg gcacagccac cattaccgtc 1080
atggtgcggt aa 1092

<212> Type : DNA
<211> Length : 1092
SequenceName : SEQ ID 571
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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ggctgcgcct ggataccctc cacgccgctg gtgcaggggg cgaccagtgc acaaccggtt 120
cccggtccga cgcccgtcgc caacggttct attttccagt ctgctcagcc gattaactat 180
ggctatcaac cgctgtttga agatcgtcga ccacgcaata ttggcgatac gctgaccatc 240
gtgttgcagg agaacgtcag cgccagcaaa agctcctctg cgaatgccag ccgtgacggt 300
aaaactaatt ttggctttga tactgtgccg cgctatttgc aggggctgtt tggtaacgct 360
cgtgccgatg tcgaagcctc cggtggtaac acgttcaacg gaaagggcgg ggccaatgcc 420
agcaatacct ttagcggcac gttgacggtg acggttgacc aggtactggt caacggcaac 480
ctgcatgtgg tgggtgaaaa acagattgcc attaatcagg gtaccgaatt tattcgcttc 540
tcgggcgtgg ttaatccacg cactatcagc ggcagcaata ccgtaccgtc tactcaggtg 600
gcggatgcgc gtattgaata cgtaggcaat ggctacatta acgaagcgca aaatatgggc 660
tggttgcagc gtttcttcct taacctgtcg ccaatgtaa 699

<212> Type : DNA
<211> Length : 699
SequenceName : SEQ ID 572
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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gtggttgcct ccgaactggc ccgcgcacag ggtaaacgtg gcggtgtggc ggttgcactg 120
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gaaacagtga atggcggaac actggtaaac catgacaacc agtttgtatc cggaacagct 240
gatggcgtga ctgtcagtac cgggcttgag ctggggccgg acagtgacga aaacaccggc 300
gggcaatgga taaaagcggg tggcacaggc agaaacacca ctgtcaccgc aaatggtcgt 360
cagattgtgc aggcaggagg aactgccagt gatacggtta ttcgtgatgg cggagggcag 420
agccttaacg gactggcggt gaacaccacg ctggataaca gaggtgagca gtgggtacac 480
gggggaggga aagctgccgg tacaattatt aaccaggatg gttaccagac ataaaacat 540
ggcggactgg caaccggaac catcgtcaac accggtgcag aaggtggtcc ggagtctgaa 600
aatgtgtcca gcggtcagat ggtcggaggg acggctgaat ccaccaccat caataaaaat 660
ggccggcagg ttatctggtc ttcggggatg gcacgggaca ccctcattta cgccggtggt 720
gaccagacgg tacacggaga ggcacataac acccgactgg agggggtaa ccagtatgta 780
cacaacggtg gcacggcaac agagacgctg ataaaccgtg atggctggca ggtgattaag 840
gaaggaggaa ctgccgcgca taccaccatc aaccagaaag aaagctgcag gtga 894

<212> Type : DNA
<211> Length : 894
SequenceName : SEQ ID 573
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgatgatga aaactattaa acatcttctg tgctgtgcca ttgccgccag cgcattaatt 60

tccaccgggg tgcatgctgc gtcctggaaa gatgcgctct ccagcgccgc cagcgaactt 120
ggcaaccaaa acagcacgac acaggaaggc ggttggtcgc tcgcgtcatt aactaacttg 180
cttagcagcg gaaaccaagc cttaagcgca gataacatga acaatgccgc aggcattctg 240
caatactgcg cgaagcaaaa gctggcttcg gtaaccgatg ccgaaaacat caagaaccag 300
gtgctggaaa agctgggcct gaacagtgaa gagcaaaaag aagacaccaa ctatctggac 360
ggtattcagg gtttgctgaa aacaaaagat ggtcagcaac tcaatctgga taacatcgga 420
acgactccgc tggcagaaaa ggtgaaaacc aaagcctgcg atctggtgtt aaagcagggg 480
ctgaacttca tttcctga 498

<212> Type : DNA
<211> Length : 498
SequenceName : SEQ ID 574
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgtttaaag gacaaaaaac attggccgca ctggccgtat ctctgctgtt cacagcacct 60
gtttatgcgg ctgatgaagg atccggtgaa attcacttta aaggtgaagt tattgaagca 120
ccgtgtgaaa tacatcagga tgatattgat aaagaggttg aactcggtca ggtgaccacc 180
agccacatta atcagtcaca tcacagcgat gccgttgctg tcgacctgct cttagtcaac 240
tgtgatctgg aaaactccag caacggttcc ggtggcaaga tttctaaagt tgcagtcacc 300
tttgatagct cagcgaaaac caccggcgca gatccgattc tcaacaacac cagcacgggt 360
gaagccaccg gcgtcggcgt acgtttaatg aataaagatc aaagcaatat cgttttaggc 420
accgctactc cagatatcga cctggctccg acctccagcg aacaaacgct gaatttcttt 480
gcctggatgg aacaaattga tcaggctaca cctgtaacgc caggcgcagt tacggcgaat 540
gcaacctacg tgctggatta taaataa 567

<212> Type : DNA
<211> Length : 567
SequenceName : SEQ ID 575
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgagcgcgg gaagcccaaa attcaccgtt cgccgcattg cggctttgtc actggtttcg 60
ctatggctgg caggctgttc tgacacttca aatccaccgg caccggtcag ctccgttaat 120
ggcaatgcgc ctgcaaatac taattctggt atgttgatta cgccgccgcc gaaaatgggg 180
acgacgtcta cagcgcagca accgcaaatt cagccggtac agcagccaca aattcaggct 240
actcaacaac cgcaaatcca gccagtgcag ccagtagctc agcagccggt acagatggaa 300
aacggacgca tcgtctataa ccgtcagtat gggaacattc cgaaaggcag ttatagcggc 360
agtacctata ccgtgaaaaa aggcgacaca cttttctata tcgcctggat tactggcaac 420
gatttccgtg accttgctca gcgcaacaat attcaggcac catacgcgct gaacgttggt 480
cagaccttgc aggtgggtaa tgcttccggt acgccaatca ctggcggaaa tgccattacc 540
caggccgacg cagcagagca aggagttgtg atcaagcctg cacaaaattc caccgttgct 600
gttgcgtcgc aaccgacaat tacgtattct gagtcttcgg gtgaacagag tgctaacaaa 660
atgttgccga acaacaagcc aactgcgacc acggtcacag cgcctgtaac ggtaccaaca 720
gcaagcacaa ccgagccgac tgtcagcagt acatcaacca gtacgcctat ctccacctgg 780
cgctggccga ctgagggcaa agtgatcgaa acctttggcg cttctgaggg gggcaacaag 840
gggattgata tcgcaggcag caaaggacag gcaattatcg cgaccgcaga tggccgcgtt 900
gtttatgctg gtaacgcgct gcgcggctac ggtaatctga ttatcatcaa acataatgat 960
gattacctga gtgcctacgc ccataacgac acaatgctgg tccgggaaca acaagaagtg 1020
aaggcggggc aaaaaatagc aaccatgggt agcaccggaa ccagttcaac acgcttgcat 1080
tttgaaattc gttacaaggg gaaatccgta aacccgctgc gttatttgcc gcagcgataa 1140

<212> Type : DNA
<211> Length : 1140
SequenceName : SEQ ID 576
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
gtgattaaat ttctctctgc attaattctt ctactggtta cgacggcggc tcaggctgag 60
cgtattcgcg atctcaccag tgttcagggg gtaaggcaaa actcactgat tggctatggc 120

ttggtagtgg ggctggatgg cactggtgac cagacaaccc agacgccgtt taccacacaa 180
acgcttaata acatgctctc acagctggga attaccgttc cgacgggcac caatatgcag 240
ctaaaaaacg tcgctgcggt aatggtgaca gcgtcacttc ctccgtttgg acgtcagggg 300
caaaccatcg atgtggtggt ttcttccatg ggtaatgcca aaagcttgcg tggaggtacg 360
ttgttgatga caccgcttaa gggcgttgac agtcaggtgt atgcgctggc gcagggcaat 420
attctggttg gcggcgcagg agcctccgca ggcggtagca gtgttcaggt taaccaactg 480
aacggtggac ggatcaccaa tggtgcggtt attgaacgtg aattgcccag ccagtttggc 540
gtcgggaata cccttaattt gcaacttaac gacgaagatt tcagcatggc gcagcaaatc 600
gctgacacca tcaaccgcgt gcgtggatat ggcagcgcca ccgcgttaga tgcgcggact 660
attcaggtgc gcgtaccaag tggcaacagt tcccaggtcc gtttccttgc cgatatccag 720
aatatgcagg ttaatgtcac cccgcaggac gctaaagtag tgattaactc gcgcaccggt 780
tcggtggtga tgaatcgcga agtgaccctc gacagctgcg cggtagcgca gggaaatctc 840
tcagtaacag ttaatcgtca ggccaatgtc agccagccag atacaccgtt tggtggtgga 900
cagactgttg ttactccaca aacgcagatc gatttacgcc agagcggcgg ttcgctgcaa 960
agcgtacgtt ccagcgccag cctcaataac gtggtgcgtg cgctcaatgc gctgggcgct 1020
acgccgatgg atctgatgtc tattttgcaa tcaatgcaaa gtgcgggatg tctgcgggca 1080
aaactggaaa tcatctga 1098

<212> Type : DNA
<211> Length : 1098
SequenceName : SEQ ID 577
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgaaacgtt caattattgc tgccgctgtc ttttcttctt tttttatgag cgctggagta 60
tttgctgcag acgttgatac cggaacatta accattaaag gaaatattgc agaatctccg 120
tgtaaattcg aagcgggtgg tgattcagta agtattaata tgccgactgt accaaccact 180
gtctttgaag gtaaagctaa atattctacc tatgatgatg cagtcggtgt aaccagcagc 240
atgttaaaaa ttagctgccc gaaagaagtt gctggtgtaa aactctcgtt gatcacaaac 300
gacaaaataa ccggtaacga taaggcgata gccagtagca acgataccgt aggtgataac 360
agcgatgtcc tagatgtttc tgcacctttt aacattgaga gttataaaac agcggaaggt 420
caatatgcta ttccgtttaa agcaaaatac ctgaaactga cagataactc agtgcaatca 480
ggtgatgtgt tatcttctct ggttatgcgt gtggcgcagg attaa 525

<212> Type : DNA
<211> Length : 525
SequenceName : SEQ ID 578
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atggcggttc aaaagaatgt tatcaaaggc atactggcag gtacgtttgc gctaatgctg 60
agcggttgtg tcactgtgcc ggacgccatt aaaggcagca gtaccacgcc gcaacaagat 120
ttagttcggg tgatgagtgc gccgcagctg tacgttggtc aggaggcacg ctttggtggc 180
aaagtggttg cggtacaaaa ccagcaaggg aaaacccgcc tggaaattgc taccgtaccg 240
ctggacagcg gagctaggcc gacgctggga gaaccttctc gcggtcgcat ttatgccgat 300
gtgaacggtt ttctggaccc ggtggatttc cgtggacaac tggttacggt agtcgggcca 360
atcaccggtg cggttgacgg caaaatcggc aatacgccct ataaatttat ggtgatgcaa 420
gtaacgggtt acaaacgttg gcatttaacc cagcaggtga ttatgccgcc tcagccgatt 480
gatccatggt tttatggcgg tcgtggctgg ccctatggct acggcggatg gggctggtat 540
aatcccggcc ccgcgagagt acaaacagtt gtaaccgaat aa 582

<212> Type : DNA
<211> Length : 582
SequenceName : SEQ ID 579
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgagaaaca aacctttta tcttctgtgc gctttttttgt ggctggcggt aagtcgcgtt 60
ttggctgcgg atagcacgat tactatccgc ggctatgtca gagataacgg ctgtagtgtg 120
gccgctgaat caaccaattt tactgttgat ctgatggaaa acgcggcgaa gcaatttaac 180
aacattggcg cgacgactcc tgtcgttcca tttcgtattt tgctgtcacc ctgtggtaat 240

gccgtttctg ccgtaaaagt tgggtttacc ggcgttgcag atagccacaa tgccaacctg 300
cttgcacttg aaaatacggt gtcagcggct gcgggactgg gaatacagct tctgaatgag 360
cagcaaaatc aaataccccct taatgctcca tcgtctgcga tttcgtggac gaccctgacg 420
ccgggtaaac caaatacgct gaatttttac gcccggctaa tggcgacaca ggtgcctgtc 480
actgcggggc atatcaatgc tacggctacc ttcactcttg aatatcagta a 531

<212> Type : DNA
<211> Length : 531
SequenceName : SEQ ID 580
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgaaaaagt taacagtggc ggctttggca gtaacaactc ttctttctgg cagtgccttt 60
gcgcatgaag caggcgaatt ttttatgcgt gcaggttctg caaccgtacg tccaacagaa 120
ggtgctggtg gtacgttagg aagtctgggt ggattcagcg tgaccaataa cactcaactg 180
ggcttgacgt ttacttatat ggcgaccgac aacattggtg tggaattact ggcagcgacg 240
ccgttccgcc ataaaatcgg cacccgggcg accggcgata ttgcaaccgt tcaccatctg 300
ccgccaacac tgatggcgca gtggtatttt ggtgatgcca gcagcaaatt ccgtccttac 360
gttggggccg gtattaacta caccaccttc tttgataatg gatttaacga tcatggcaaa 420
gaggcggggc tttccgatct cagtctgaaa gattcctggg gagctgccgg gcaggtgggg 480
gttgattatc tgattaaccg tgactggttg gttaacatgt cagtgtggta catggatatc 540
gataccaccg ccaattataa gctaggcggt gcacagcaac acgatagcgt acgcctcgat 600
ccgtgggtgt ttatgttctc agcaggatat cgtttttaa 639
<212> Type : DNA
<211> Length : 639
SequenceName : SEQ ID 581
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
ttgtttttta agcgaggaaa gattttgagt gcgggacgcc tgaataaaaa atctctgggt 60
atcgtgatgt ttttatcggt tggactgcta ttggcgggct gttcgggtag caaatcatcc 120
gatacaggaa cgtattccgg ctccgtttac accgtgaaac ggggggatac gctatatcgt 180
atttcgcgca ccacgggaac cagcgtaaaa gagctggcgc gactgaacgg catttccccc 240
ccttacacca ttgaagttgg tcagaaacta aaactgggtg gggcgaaaag tagcagtagt 300
acacgtaaat caaccgccaa atcaacgact aaaaccgcat cggttacacc gtcatcagcg 360
gtaccgaaat cttcctggcc gccagtaggg caacgttgtt ggttatggcc aacgacaggg 420
aaagttatca tgccgtattc gacagcagat ggcggcaata aagggattga tatctcagct 480
ccacggggta cacctattta cgccgcgggt gcaggaaagg tggtgtatgt gggcaaccag 540
ctgcgtggct acggtaatct catcatgatt aaacacagtg aagattacat tacggcttac 600
gcccataatg acacgatgct ggtaaataat gggcaaagcg tgaaggctgg gcaaaaaatc 660
gccactatgg ggagcacgga tgcggcatct gttcgcctgc atttccagat tcgttaccgt 720
gcaacggcaa ttgatccgct acgttacttg ccgccgcagg gcagcaagcc aaaatgctga 780

<212> Type : DNA
<211> Length : 780
SequenceName : SEQ ID 582
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atggcacaag tcattaatac caacagcctc tcgctgatca ctcaaaataa tatcaacaag 60
aaccagtctg cgctgtcgag ttctatcgag cgtctgtctt ctggcttgcg tattaacagc 120
gcgaaggatg acgccgcggg tcaggcgatt gctaaccgtt ttacttctaa cattaaaggc 180
ctgactcagg ctgcacgtaa cgccaacgac ggtatttctg ttgcacagac cactgaaggc 240
gcgctgtccg aaatcaacaa caacttacag cgtatccgtg agctgacggt tcaggcttct 300
accgggacta actctgattc ggatctggac tccattcagg acgaaatcaa atcccgtctc 360
gacgaaattg accgcgtatc cggtcagacc cagttcaacg gcgtgaacgt actggcaaaa 420
gacggttcga tgaaaattca ggttggtgcg aatgacggcc agactatcac tattgatctg 480
aagaaaattg actctgatac gctggggctg aatgggttta atgtgaatgg tggcggggct 540

gtggctaata ctgctgcatc taaagctgac ttggtagctg ctaatgcaac agtggtcggc 600
aacaaatata ctgtgagtgc gggttacgat gctgctaaag cgtctgattt gctggctgga 660
gttagtgatg gtgatactgt tcaggcaacc attaataacg gcttcggaac ggcggctagt 720
gcaacgaatt acaagtatga cagtgcaagt aagtcatact cttttgatac cacaacggct 780
tcagctgccg atgttcagaa atatttgacc ccgggagttg gtgataccgc taagggcact 840
attactatcg atggttctgc acaggatgtt cagatcagca gtgatggtaa aattacggca 900
agcaatggag ataaactcta cattgataca actgggcgct taacgaaaaa cggctctggt 960
gcttctttga ctgaggctag tctgtccaca cttgcagcca ataataccaa agcgacaacc 1020
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acttattcag taacaggtgc aaaagttgat caggcagctt tcgataaagc tgtatcaacc 1140
tcgggaaaca atgttgattt cactactgca ggttatagcg tcaacggcac aactggcgct 1200
gtaacaaaag gtgttgattc ggtttatgtt gataacaacg aggcgttgac cacatctgat 1260
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tataaagatg ctgatggtaa attgacgaca gatgctgaaa caaaagcagc tacgacagcc 1380
gatcccctga aagctctgga tgaagccatc agctccatcg acaaattccg ctcctccctg 1440
ggtgcggtgc aaaaccgttt ggattccgca gtcaccaacc tgaacaacac cactaccaac 1500
ctgtctgaag cgcagtcccg tattcaggac gccgactatg cgaccgaagt gtccaacatg 1560
tcgaaagcgc agattatcca gcaggccggt aactccgtgc tggcaaaagc caaccaggta 1620
ccgcagcagg ttctgtctct gctgcagggt taa 1653

<212> Type : DNA
<211> Length : 1653
SequenceName : SEQ ID 583
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgaaaaaaa ttgcatgtct ttcagcactg gccgcagttc tggctttcac cgcaggtact 60
tccgtagctg cgacttctac cgtaactggc ggttacgcac agagcgacgc tcagggccaa 120
atgaacaaaa tgggcggttt caacctgaaa taccgctatg aagaagacaa cagcccgctg 180
ggtgtgatcg gttctttcac ttacaccgag aaaagccgta ctgcaagctc tggtgactac 240
aacaaaaacc agtactacgg catcactgct ggtccggctt accgcattaa cgactgggca 300
agcatctacg gtgtagtggg tgtgggttat ggtaaattcc agaccactga atacccgacc 360
tacaaacacg acaccagcga ctacggtttc tcctacggtg ctggtctgca gttcaacccg 420
atggaaaacg ttgctctgga cttctcttac gagcagagcc gtattcgtag cgttgacgta 480
ggcacctgga ttgccggtgt tggttaccgc ttctaa 516

<212> Type : DNA
<211> Length : 516
SequenceName : SEQ ID 584
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgaagcgta atattatagg cggtgcattc actctggcat ctctaatgct ggccgggcat 60
gcactggcag aagatggtgt tgttaacttc gtcggtgaaa ttgtcgacac tacttgtgaa 120
gttacctccg atacagccga tcaaattgtc ccactgggta aagtcagtaa aaatgcattt 180
tcaggtgtag gtagtctggc gtcgccacag aagttcagta ttaaacttga aaattgcccg 240
gcaacgtaca ctcaagcagc cgttcgtttt gatggtacag aagcgcctgg cggcgacggc 300
gacctgaaag tgggtacgcc gcttacagca ggcaaccctg gtgattttac cggtacagga 360
caagcgattg cggcaaccgg cgttggtatt cgtatttta accagtccga taattcgcag 420
gttaaacttt ataacgactc tgcttatacc gctatcgatg ctgaaggcaa ggctgaaatg 480
aagtttattg cacgctatgt ggcaaccaat gcgaccgtaa cggctggtac ggcgaacgct 540
gattcacaat ttactgtcga atataagaaa taa 573

<212> Type : DNA
<211> Length : 573
SequenceName : SEQ ID 585
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgaaaaaga gcactctggc attagtggtg atgggcattg tggcatctgc atctgtacag 60
gctgcagaaa tatataataa agacggtaat aaactggatg tctatggcaa agttaaagcc 120

atgcattata tgagtgataa cgccagtaaa gatggcgacc agagttatat ccgttttggt 180
tttaaaggtg aaactcaaat taacgatcaa ctgactggtt atggtcggtg ggaagcggag 240
tttgccggaa ataaagcgga gagtgatact gcacagcaaa aaacgcgtct cgcttttgcc 300
gggttgaaat ataaagattt gggttctttc gattatggtc gtaacctggg cgcgttgtat 360
gacgtggaag cctggaccga tatgttcccg gaatttggtg gcgattcctc ggcgcagacc 420
gacaacttta tgaccaaacg cgccagcggt ctggcgacgt atcggaacac cgacttcttc 480
ggcgttatcg atggcctgaa cttaaccctg caatatcaag ggaaaaacga aaaccgcgac 540
gttaaaaagc aaaacggcga tggcttcggc acgtcattga catatgactt tggcggcagc 600
gatttcgcca ttagtggggc ctataccaac tcagatcgca ccaacgagca gaacctgcaa 660
agccgtggca caggcaagcg tgcagaagca tgggcaacag gtctgaaata cgatgccaat 720
aatatttatc tggcaacttt ctattctgaa acacgcaaaa tgacgccaat aactggcggc 780
tttgccaata agacacagaa ctttgaagcg gtcgctcaat accagtttga ctttggtctg 840
cgtccatcgc tgggttatgt cttatcgaaa gggaaagata ttgagggcat cggtgatgaa 900
gatctggtca attatatcga cgtcggtgct acgtattatt tcaacaaaaa tatgtcagcg 960
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gatactgtcg cggttgggat gacgtatcag ttttaa 1056

<212> Type : DNA
<211> Length : 1056
SequenceName : SEQ ID 586
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgcgtaagc agtggctcgg gatctgcatc gcggcaggaa tgctcgcggc atgtacaagc 60
gatgatggtc agcaacagac ggtaagtgta ccgcagcctg cggtatgtaa cggccccata 120
gttgaaatta gcggggcgga cccgcgtttc gaaccactga acgcgacggc aaatcaggat 180
taccagcgcg acggtaaaag ctacaaaatc gtgcaggatc cgtctcgatt tagccaggcg 240
ggactggcgg caatctatga tgccgaacca ggcagtaacc tgacggcctc tggcgaagct 300
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atcactaacc tggctaacgg gcgaatgatc gtggtgcgca ttaatgatcg cggcccttac 420
ggcaacgacc gcgttatttc gctttctcgc gcggcagctg accgtcttaa cacgtcaaac 480
aacaccaaag ttcgtatcga tccgattatt gtcgcccagg atggttcgct ttctggtcct 540
ggtatggctt gtaccacagt cgccaaacag acttacgccc tgcctgcacc tcccgattta 600
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aattcgacgc taaaaagcga agatccgacc ggcgcgccgg taaccagtag cggtttcctc 720
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cagcccgttg ttacagcttc gtcgacaacg cctgcaacct cgcctgcaat ggtgacaccg 840
caagccgcct cgcaaagcgc cagcggcaac tttatggtgc aagtcggggc cgtaagcgat 900
caggctcgtg cgcaacagta ccaacagcaa ctgggacaga agttcggcgt ccccggtcgc 960
gtaactcaaa atggcgcggt ctggcggatc cagcttggcc cattcgccag caaagccgaa 1020
gccagtacct tgcagcaacg tttgcaaacc gaagcccaat tacagtcatt tattactacc 1080
gcgcagtag 1089

<212> Type : DNA
<211> Length : 1089
SequenceName : SEQ ID 587
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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gtcgggatgg ctgggcctga acaagtcagt atgcatattt atgggaatgt ggtcgatcag 120
ggctgtgatg tcgccaccaa aagtgcatta caaaatattc atattggtga ttttaatatc 180
agtgattttc aggccgcgaa taccgtaagc actgctgctg atttgaatat tgatatcacc 240
ggttgtgccg ctggtattac tggcgcggac gtccttttta gcggcgaggc tgacaccctt 300
gcgccgacac tgctcaaact aactgacaca ggcggaagcg gtggtatggc aacggggatt 360
gccgtgcaaa ttcttgatgc gcaaagtcag caagaaatcc cgctcaatca ggtccagcct 420
cttacgccct taaaagccgg ggataacaca ctcaaatatc aacttcgtta taagtccaca 480
aaggcgggag caacgggcgg taatgcgacg gcggttctct attttgatct ggtttaccag 540
tga 543

<212> Type : DNA
<211> Length : 543
SequenceName : SEQ ID 588
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgaaaaaca aattgttatt tatgatgtta acaatactgg gtgcgcctgg gattgcagcc 60
gcagcaggtt atgatttagc taattcagaa tataacttcg cggtaaatga attgagtaag 120
tcttcattta atcaggcagc cataattggt caggctggga ctaataatag tgctcagtta 180
cggcagggag gctcaaaact tttggcggtt gttgcgcaag aaggtagtag caatcgggca 240
aagattgacc agacaggaga ttataacctt gcatatattg atcaggcggg cagtgccaac 300
gatgccagta tttcgcaagg tgcttatggt aatactgcga tgattatcca gaaaggttct 360
ggtaataaag caaatattac acagtatggt actcaaaaaa cggcagttgt agtgcagaga 420
cagtcgcaaa tggcaattcg cgtgacacaa cgttaa 456
<212> Type : DNA
<211> Length : 456
SequenceName : SEQ ID 589
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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ggatgccagt caaatgctga cgatcatgcc gccgatgttt atcaaaccga tcaactgaat 120
accaaacaag aaactaaaac cgttaatatt atttccattc ttcccgcaaa agttgccgta 180
gacaactccc aaaataaacg gaacgcacaa gccttcggcg cgcttattgg cgcagtcgct 240
ggcggtgtta tcggccacaa cgtcggttct ggcagcaatt ccggaacgac ggcaggggca 300
gttggcggcg gagctgtagg cgcggcagcg ggttctatgg tgaatgataa aaccttagtg 360
gaaggtgttt ctttaacata taaggaaggc accaaagtgt atacctccac ccaggagggt 420
aaagagtgcc agtttacgac aggtttagcc gttgttatta ccacaacgta taacgaaacg 480
cgtattcagc caaataccaa atgtcctgaa aagagctaa 519
<212> Type : DNA
<211> Length : 519
SequenceName : SEQ ID 590
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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gcgctgtttg tttgcctgaa ggcggcgaac gtgacgtcca tacgtactga atcgacctac 120
acgctttatg cgacgttcga taacattggc ggcctgaaag cgcgctctcc ggtcagcatt 180
ggtggtgttg ttgtgggccg ggtggcggat attacgctgg acccgaaaac ctatctgccg 240
cgcgtaacgc tggaaattga acaacgttat aaccacattc ctgataccag ttcgctgagc 300
attcgtactt ccggcctgct gggagaacaa tatctggcat taaacgtcgg ttttgaagac 360
ccggaactgg ggactgctat cctgaaggat ggcgatacaa ttcaggacac caagtctgcg 420
atggtgctgg aagatctcat tggtcagttc ctttacggta gtaaaggcga tgacaataag 480
aatagtggcg atgcgccagc tgctgcgcca ggtaataatg aaaccactga acctgtgggt 540
acaacgaaat aa 552
<212> Type : DNA
<211> Length : 552
SequenceName : SEQ ID 591
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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cttgagttat tagaaaaagc gttaagagaa acgcaaagcg aactcaaaaa gtataaagat 120
gaagagaaga aaaaatatac gccagcgacg gtgaatcgta gcgtaagtac gaatgatcaa 180
gggtatgccg ccaatccgtt cccgaccagt agtgccgcaa aacctgatgc tgtactggtc 240
aaaaatgaag agaaaaatgc cagtgagaca ggctcgattt attcttccat gactctgaaa 300
gatttcagta agtttgtgaa agatgaaatt ggctttagtt acaacggcta ttaccgttct 360
ggttgggggа ccgcctctca tggttcacct aaatcatggg cgattggttc tctgggccgc 420
tttggtaacg aatactccgg ctggtttgat ttgcagttaa aacaacgtgt ctacaacgaa 480

aacggcaaac gggttgatgc cgttgtgatg atagatggta acgttggtca gcagtactct 540
accggctggt ttggcgataa tgccggtggc gagaacttta tgcagttctc cgatatgtac 600
gttaccacca aaggtttcct gccctttgcg ccagaggctg atttctgggt gggtaaacac 660
ggtgcgccga aaattgaaat ccagatgctg gactggaaaa cgcagcgtac tgatgctgca 720
gcgggtgtag gtctggaaaa ctggaaagtc ggtccgggta aaattgatat cgcgctggtt 780
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gaactggatg gcttcacctt cgaagacaat aaagacgccc agtttgctgt cggtgcccag 1560
gctgaaatct ggtggtaa 1578

<212> Type : DNA
<211> Length : 1578
SequenceName : SEQ ID 592
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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atcaacaact tgaccgcaca acagcaagca gcacaagcac aagttaatac gattcaagga 180
caagtaagtg ctttacagac acaacaagct gaattacaag ctgaaaatca aagacttgaa 240
gctcagtctg ctactttggg tcaacaaatt caaacacttt caagcaaaat tgttgcacgt 300
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agtgcagcag cggcaggata tagagttggt tctacacctt cagctggagc tgtagctgta 1140
tggaatgatg gcggttatgg acacgttgct tatgttacag gtgttcaagg tggccaaatt 1200
caagttcaag aagctaacta tgcaggtaac caatctattg gtaactaccg tggttggttt 1260
aatccaggta gtgtaagcta tatctatcca aactaa 1296

<212> Type : DNA
<211> Length : 1296
SequenceName : SEQ ID 593
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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acgaccacta ctagtgatgt agatactaaa gtagttggaa cacaaactgg aaatccagcg 180
accaatttgc cagaggctca agggagtgcg agtaaggaag ctgaacaaag tcaaaaccaa 240
gctggagaga caaatggttc aataccagtt gaagtaccta aaactgatct tgatcaagca 300
gcaaaagatg ctaagtctgc tggtgtcaat gttgtccaag atgccgatgt taataaagga 360
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aaacaagctg aggatattaa gaagacaaca gatcaatata aatcggatgt agctgctcat 480

gaggcagaag ttgctaaaat caaagctaaa aatcaggcaa ctaaagaaca gtatgaaaaa 540
gatatggcag ctcataaagc cgaggttgaa cgcattaatg ctgcaaatgc tgccagtaaa 600
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aaagattga 4689

<212> Type : DNA
<211> Length : 4689
SequenceName : SEQ ID 594
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 2505
SequenceName : SEQ ID 595
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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gtaaccaaac gtcagaaaaa agattactat ctggcagatc caaaaaatta tcaaaaaatc 420
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ttaaaattaa tgggacaaga ttatcatagt ggtatgacct tatcaacaga tggctataag 1440
gaagctatgg agaaattaag agctacttat gctcaatatg gtttgggtgt ctcaacagga 1500
attgaccttc cgggagagtc aaagggctat acgccagaac attatgatcc ttctaatgtt 1560
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aataataaaa caggcggttt aggaaatctt gttcaatcta ttgacaccaa ggttttaaat 1740
aatgtttcta tctctagcga tgacatgggg attatcaagg aaggtttcta taatgttgtt 1800
aacggtggta gttatgcaac agggaagact cttgcaaaag gggcaagtgt tcccatttcg 1860
gcaaaaacag ggacagccga agcttacgtg acaggagatg atggtaaatc tgtttataca 1920
tccaatttaa acgttgttgc ttatgcacca agcagcaatc ctcaaattgc tgtagctgtt 1980
gtcttgccac atgagacaga ccttcatgga accactagtc atgctattac gagagatatc 2040
atcaatcttt atcaaaagat gtatccaatg aatcagtga 2079

<212> Type : DNA
<211> Length : 2079
SequenceName : SEQ ID 596
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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attggaggtc ttctgtttac ctattatgtc agcagtactc ctaaactatc agaagctaaa 120
cttaaagcta ctaattctag tttggtttat gatagcaata ataatctgat tgctgattta 180
ggtgctgaaa agcgcgaaag tatttcttca gacagtattc caatgaagtt agtaaatgcc 240
gttacctcta ttgaagatca ccgtttcttt aaacatcgtg gtgtcgacat ttatcgtatt 300
attggtgcag cttggagtaa tttacttcat aaatcaactc aaggggatc cactcttgat 360
cagcagctta tcaagctggc ctatttctct actaaagagt ctgatcagac cttaaaacgt 420
aaagctcaag aagtttggct gtctctacaa atggagaaaa aatacacgaa agaagagatt 480
ctaacttttt atgtcaataa ggtttacatg ggtaatggga attacggaat gcgcactgct 540
gcaaagtctt attatggcaa ggatcttaaa gacttatcaa ttgcccagct agcgacactc 600
gcaggtattc cgcaagcacc gacacaatat gatccttacg ctcagccaaa ggcagctaca 660
agcagacgta ataccgtttt gtcacagatg tataaacata aaaaaattac aaaacgagaa 720
tatgatgctg cagtagcaac accaatttct gatggcctgc aagaactgaa acgctcctct 780
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cagcaatatc tctggaacat ttataataca gatgaatata ttgcttatcc tgatgataat 960
ttccaagttg cttctactgt tatggatgtt actaatggta aagttattgc acagcttggc 1020
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caagtctatg actgggatca tcgttataat ggttggatga ctatccaaac ggctatccaa 1260
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tttaaggatg gaacatcaga gacctatgat gctaaaggca atcgtgcgat gaaagaaacg 1560

acagcctaca tgatgacaga tatgttaaaa acagtattaa catatggtac tggtactgag 1620
gctgctattc ctggtcttta tcaagcaggt aaaacaggaa catccaacta tgatgacaat 1680
gaattggtag agatgtctga aaaacttggt attaatcctt atggacttgg tactattgct 1740
ccagatgaaa actttgttgg ttatacacct cagtattcaa tggctgtttg gacaggatat 1800
aaaaatcgct taatgcctgt ttacggagac agtatgaaaa ttgctgcgca agtctatcgt 1860
actatgatgg cttatctttc tagctcaggt aattctgatt ggaccatgcc tgacggtctc 1920
tatcgcagcg gtggttatct ttacctaaat ggttcaagtg ggtcaaatag taggtatggt 1980
gcagctcctg caacttcatc gtcatcttct tcatcatctt cttctgattc aaacaataac 2040
gatcaaaata ataatcaaac tacagaagcg tctagtgact catcttcatc aagttctgat 2100
gctacgacat cttctaatcc ataa 2124

<212> Type : DNA
<211> Length : 2124
SequenceName : SEQ ID 597
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgaaatcga aaactgctaa aattactttg ctaagcagcc ttgctttggc ggcttttgga 60
gcaacgaatg tttttgcaga tgaagcatca actcaattaa attctgatac tgttgcagca 120
cctactgctg atacacaagc atcagaaccg gctgcaacag aaaaagaaca gtctcctgtt 180
gtagctgttg tcgaaagtca cacacaagga aatacaacaa cgacaacatc tcaagttact 240
tctaaagaat tggaagatgc taaggctaat gctaatcagg aaggtttaga agtcactgaa 300
actgaagctc aaaaacagcc ttcggtagaa gctgcagatg cagataacaa agcacaggca 360
caaacaatta atacagcggt agctgattat caaaaggcaa aagctgaatt tcctcaaaaa 420
caagaacaat ataataaaga ttttgaaaag tatcagtctg atgtcaagga gtatgaagct 480
caaaaggcag cttacgagca atataaaaaa gaagttgcac aaggtttggc atctgggcgt 540
gttgaaaaag cccaaggact tgtgtttatt aatgaacctg aggcaaaact ttctattgag 600
ggtgttaatc agtacctaac aaaagaagca cgtcaaaaac atgcaactga agatattctt 660
cagcaatata atactgataa ttatacagct tctgatttta cccaagcaaa tccatatgat 720
ccaaaagaag atacttggtt caaaatgaaa gtgggagatc agatttcagt tacctacgat 780
aatatcgtta attcaaaata taatgataaa aagattagta aggtaaagat taattatact 840
ctcaatagtt caacgaataa tgaaggcagt gcactggtca atttgttcca tgatccaact 900
aagacaattt tcattggtgc acagacatct aatgctggca gaaatgataa aatcagtgtg 960
acgatgcaaa ttatttttta tgatgaaaat ggcaatgaaa tcgatttaag cggcaataat 1020
gccattatga gtctctcatc gttaaaccat tggacgacta agtatggcga tcatgtggaa 1080
aaagtaaacc ttggggataa tgaattcgtt aaaataccgg gctcatctgt tgacttacat 1140
ggcaatgaaa tctattcggc taaggacaac caatataaag ctaatggtgc aacctttaat 1200
ggtgatggag cagatggctg ggatgctgtc aatgctgatg gaacgccacg tgctgcgacg 1260
gcttattatg gtgcaggtgc tatgacttac aagggagaac ccttcacctt tactgttggt 1320
ggtaatgatc aaaacttacc aacaaccatt tggtttgcga ctaattcagc tgtagctgtg 1380
cctaaagatc cgggagctaa accaacaccg ccagaaaaac cagagttgaa aaaacctact 1440
gtgacttggc ataaaaatct tgttgttgaa actaaaactg aggaagttcc tccagtgaca 1500
ccaccaacaa ctcctgatga accaacgcca gaaaagccaa aaacaccaga ggatcctcaa 1560
tcacctgtcg tagctaagtc agtaagcttt agaacggcaa gaaaaggaga aatgcgtgtt 1620
agagagcgtg attatcaacc gactcttcca catgctgggg ctgctaaaca aaatggttta 1680
gctactcttg gtgctatttc aactgcattt gctgcggcta ctttgattgc agctagaaaa 1740
aaagaaaact ag 1752

<212> Type : DNA
<211> Length : 1752
SequenceName : SEQ ID 598
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atggaacaga agatttttag caaacgaaaa agtaagattg ctgggctttg tggagctatt 60
ttaacgacta cagttgttgc ccttgcgtca ggtactgtaa tcgaggctga tgagacaata 120
gaacagcctg tcgcagctga gactgtctcg caagctgatg gggacaatcc cgaacaaaca 180
acaagcgttc aacaagaaac tgctcctcaa caaacgaaaa cttctcaaag ctcagacgca 240
accgtagata gtgaagagtc agcaacttcc ccatctgatg aacagaccgt aagtcaaaat 300
gattcaaact catcatctca aattgatcaa acgatagctg atacgaatcg ctctgactct 360
gatcatattt caaaaacatc agccgctaca actgaagatc aagaagagaa agttaattct 420
gcaaaagcac aaactgctgc cgcaaccaac aatcaagaca ctcgttatag tgcgaaagat 480
gcttatggca attccaattt taacaagaca ttaactgaat ttggaaaaaa tgctaatgtt 540

gctgatgtaa cctataatgg cgtgagggat gaatatattg tagttaacga tcctagtgct 600
ccttacgttc ctaatgcaaa cgaaattgca aaatacttaa aggaatattt aacagaactc 660
cgcaacatca ataatattgc tattcctgtg ccttctgttg atcaggttat gcaaaaatac 720
gcacaagatc gggctaacga agaagccaat gaaaaaaacg gcttggatca tgatactaat 780
ttacctatcc ctaataattt aacttgggtt gccgaagatg gacatttgga tatggatagc 840
agcattcaat ccaaaagtca agaaggctat acacttgctt ctgataaagc aaccgcctac 900
tatctagcgc ttaactggtt ttctgactat tttaatattt acgatgaccc caacgatggc 960
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ggtcttgctt caggtcaaga taatgaaaag ggaatgtggt acgcacaatt ggaatttggt 1080
ggtaacgata acgaagataa taccaacgat ttttcatctt taaaaaacgg caagggagaa 1140
tgggtattat attataaagg aagtcctgtt aagtttcttc ctaacactac cttttggtat 1200
gtaaaaaaag gcacttcccc tgatgcagct tctactcctc acaacagtga taaaccttca 1260
ttccagtcat ctaaagatct tgaccctaat ttcaaggccg ataatagatt ccaagaagga 1320
aaggaagcct ctgttcatca ggctattcct gcaacattta aatctcatcg cgatgaagtt 1380
ggtaataaag accaaaattc tctttctgct caactacctg atacaggagt tcaaaaaaat 1440
aatcaattag ccttgatagc tttaggaaca ggcttgattt tactttccgg acttcttctt 1500
tcaaaaagaa aatccttaaa ataa 1524

<212> Type : DNA
<211> Length : 1524
SequenceName : SEQ ID 599
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgacatttg aaaagcaaaa acactttagt ttacgtaaac taaaatttgg tttagtttca 60
gttgcgatca tagctttctt atttgctgta acaaagactg cagaagctga cgagacagtg 120
ataactgaac aaaggcaaac aagtaagatt aacgctagtt ctcaaaaagt ggagaatcag 180
acttcaaatc aggtggaagc aaaaacggat agtgcaaaca aggatcctca agaaaaaaca 240
ggaagtgttg caactgatgc cccttcaatg aattcagcta ataatatgag tcagtctgac 300
aaacaaaata ctgttaatga aatatcttca gatagtcagc aaacaaaaac agatgaacaa 360
actgatttac cgcaaaacag ctttaaacaa caatctgctc atgttaaaat gactactgaa 420
gcagagaaga ccccatcaca ttcgattaat acctttgtta atgatggtaa tggtaattgg 480
tattaccttg gtgctgatgg tagaaatgtt acaggcagtc atacgattgg tggcaagact 540
atgtattttg ctcaagatgg taagcaagtt aaaggtgctt ttgctcaaga ttcggatgga 600
aataaacatt attatgatag agatagtggt gagatgtgga ccaatcgctt tgtcaatgat 660
caaggcaatt ggtattatct taataatgat ggtgtccctg tcaccggtag tattactgtc 720
aatggtcagt ctctgtattt taattcggat ggtagtcagg ttaaagggaa ttttgttgaa 780
gaagatggat ctttgcgtta ttatgataaa aattctggag atttactgag aaagacaagc 840
cgaaccatta atggtgttaa ctaccaattt gataatgatg gaaatgcaag ggcgattgac 900
aaaattgagg ttgttaagac cagtcttgta gttgatagtt atgaatttgg tccttctgtt 960
tcaaagatta ttcttgagtt caatcataag gtaactcctg ctgttgttca tgctggtgca 1020
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ggacatgtgg tttactttga tagtagccat tatgtgacac ttgaattaga tattccttat 1140
gatccaaatg atagcagccg aaatgcatca ccttttattt ttgactcagc agcctttcgt 1200
aataactggg tcaacagtta tactgtcaaa gtagataatt tgcaggtgca agcagatggt 1260
tctaatagca gtcaaattat cagttcagag caagatgcta tcaataatcg tttcttgcct 1320
acaacggatc gtttctcaga acgtggtagt tatggtaatt ttaattatgc cgcctatcaa 1380
ccagaagcag ctattggcgg tgagaagaat ccattgattg tctggttgca tggtatagga 1440
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gatcctattc aaagccattt cacttctaca ggtagtggtg gtcaaaaggg agcctatgtg 1560
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attaaagcct atgtagcaag ccatccagac atcgatagcc gacgcattta tttggcaggt 1680
gtttctaatg gtggcggtat gactctggat atgggagtcg cttatcctaa ctattttgca 1740
gccttagttc ctattgctgc ttcctatagt aatcaattaa cagataatca gattaccgct 1800
gctgctttga aagctctgaa aggtcaacca atgtggttga ttcatacacg aactgataaa 1860
acaatatctg cagatagtag tgttctacca ttctataaag agttacttca agctggcgca 1920
caaaataaat ggctttccta ttatgaaact aatgttggta aacatcactc tggagtcact 1980
tataacggtc actggtcttg gatttatttc ttgaatgatc aagtaactgg cactcaaaat 2040
actgataacg ccaagaattg gtctggactt tctggcatgg ttgcgaccaa tccaacctat 2100
ggtggtgatg ctaaggctac tgtcaatggc agaacttata gtaatgtctt tgattggcta 2160
aatggtcagc gaagaaggta a 2181

<212> Type : DNA
<211> Length : 2181
SequenceName : SEQ ID 600
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgaaaattt ttataaaaaa acaccaacaa agtattcttt actatagtct tagttttctg 60
ctaccaagtt ttataatgtt tctcgttcta ttctccaaaa atatttattg ggggagtagc 120
acaactattt tagctagtga tggttttcat caatatgtga tttttgatgc tctttttcgt 180
aatattctcc atggaacgga tagtttgttt tactctttta aggctgggct tggttttaat 240
atttttgctc tgacaagtta ttacttggga agtttttttaa caccttttac ttacttttt 300
aatgtaaaaa atatggcaga tgcttttttat ctcttcactt taatcaaatt tggtctaata 360
ggtttatctg ctttttacag tcttgggcaa atttatacta aaatctctaa atcactcgtt 420
ttgatgctgt caacatctta tgctttaatg agctttacta gcagtcagtt agaattaaac 480
aattggttag atgtttttat cctgctacca cttattatgc ttggtttaca gcgtttagta 540
gaaaaaaggg ggatttttct ttattttcta actcttactt gtttatttat tcaaaattac 600
tattttggtt tcatgacagc tattttctta actctttggt tttttacgca agtctcgtgg 660
gatattagaa acagaatgaa acgattaagt gattttgtgc tcgtatcaat ctttgcaacg 720
ctgacaagtg cttttatgct gcttccaaca tttcttgatt taaagagcca tggtgaagta 780
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agtcttcttg gtagttatga tacgacaaaa tatggctcta ttccaacgat ttatatcggt 900
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aaagtagctt attttctttt attggctatt attattgcaa gttttatctt tcaaccactt 1020
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gaaggtattc aaactgactg gaatttccct tcaagagagg tttatgaaga taatgtaaag 1440
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aaaaacaata agctgcaact ttacaaaaac ttctattctc ttcctttagc acttatgtca 1800
aatcatattt acaaagatgt caagtttgac tcttatcccc ttgataatca acaaaaattt 1860
gttaatgaat tgacagatct aaatcttaca cttttcaaag aaatccctat tatttcaagt 1920
gtcggaatgc aagttttaga taatcgtgtt actattaatg gttcaaaagg aaataaggca 1980
caagtttact atactgtaaa gtgtcctgca aatagtcaac tttatatcag ccttcctaac 2040
ttgacagtta ataataaaga cgaaaatgtc tttataacaa ctaacaagca cacaagttct 2100
tatatcatag acgaaagtta ttatcttttt aatttaggaa attataaaaa aactcaaaca 2160
ttaatattta agcttagttt tccaaaaaat aaaacggtta gttatgattt accacatatt 2220
tatgctctcg atttaactgc ctatcaaaaa agtataaagc aattaaaaag tcaaactgtt 2280
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attataatga cttttgtgcc ccaaggacta tatcaaggaa ttcttcttac ctgtctaggt 2520
atctttctct ttgtatttta ccaactttat tacaaaaaat ttaatttaaa ataa 2574

<212> Type : DNA
<211> Length : 2574
SequenceName : SEQ ID 601
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgaaattga aacatatttt aagaattgga gcggttgctt ttgcctcaat tcttttgtta 60
actgcttgcg gatcaaaaac atctaaaaaa acagtaaccc ttgcgactgt tggaacaaca 120
aatccatttt cttatgagaa aaagggaaaa ttgacgggat atgatatcga agttgctaag 180
gaagttttca aagcttctga taaatacgat gtcaaatatc aaaaaacaga gtggaccagc 240
attttctctg gtctagatag tgacaaatat caaatcggag ctaacaatat cagttatact 300
aaagagcgtg ccaataaata tctttattct aatccaacgg cttccaatcc attggtatta 360
gtggttccaa aagatagtga tattaagtct tataacgata ttgctgggca tagcactcaa 420
gttgttcaag gaaatacaac agtgtctatg ctgcagaaat tcaataaaaa ccatgaaaac 480
aatcaagtta aactaaactt taccagtgaa gatcttgcgc atcaaatccg gaatgtcagt 540

gatggtaagt atgattttaa aatttttgaa aaaatttcag cagaaacgat catcaaagag 600
caaggacttg ataatttgaa agttattgat cttccttcag accaaaaacc atatgtttac 660
tttatttttg cgcaagacca aaaagactta caaaagtttg tcaataaacg tctcaaaaaa 720
ctttacgaga atggtacact tgaaaaatta tcgaaaaaat accttggagg aagctatctt 780
ccagataaaa aagatatgaa ataa 804

<212> Type : DNA
<211> Length : 804
SequenceName : SEQ ID 602
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgcgatttc ttgtctttct catcgcattt tttgctgctt tctataaatt tatcgagact 60
gaacggattg attcaaatac agttgctgta aaccctgatt cgctcatttt aaagcgattt 120
ttaaaaacaa atcaattaaa tgggatcatg attgtgacgg ggccagatgg taaggctcaa 180
gtattttcaa atcaaagcaa ggtagatggc agtcctgttt caattaagga ttattttcct 240
cttgcttctt tacaaaaatt gataacaggg gtggctatcc aacaattaat tgataaagga 300
aaactgtctt taaacacacc tttaagcaaa tattatcctc aaattgaaaa tagtgaaaat 360
atcacgatac aaaatttact tacccacaca agcggtttgg cagatcgaaa agaagttcct 420
cagcaagtgc tgacaactca agagcagcaa ttggattttt cattgaccaa ttatcgcgta 480
acttatcgaa aaaaatggaa gtatgctaac attaattatg ctttgctagc tggcattatc 540
agtcaaatta gcggtcaaaa ttatgcgact tatgttcgtc aacacttctt aacagctggt 600
aaggggtggc attttaaaaa gtatattcaa ataaaagata agtccaagtt agctgccttg 660
tcagtgatgg atcaaagtac gacttgggat aagctgtcaa aagaagtgac atctaccttt 720
ggagctggtg attatgcttc taggccagtg gattattgga aatttatgat ggcttttatt 780
aatgaccaat ttgttcctgt cagcgaatac caacgttcta tgaaaatgac ttctaagagc 840
tattatggcg gcctctatat cagccaaaag atgctgcatg caaatggtgg tggctttgat 900
acttactctt gttttgctta ttcaaatcct aaaaccaaac aggtcatggt tttgtttatc 960
acaaacggta agtataaacg ggtcaaatcc ttagcagcta aagcctttaa actatatgca 1020
gattcgtatg cgctgaggaa aaatgaaacg tcaaaataa 1059

<212> Type : DNA
<211> Length : 1059
SequenceName : SEQ ID 603
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgaagaaaa aaatagctct agcagctctt tcttttgtca gtgcagctgt tcttgcagct 60
tgcagctcag cacctggtgg ttcatcagat gcagctggta ataaaattgg agatactgta 120
aaaattggtt acaatcttga attatcagga gatgtagccg cttatggaca agctgaaaag 180
aacggtgcta accttgctgt tgaagagatt aataaggcag gcggcattga tggcaaaaag 240
attaaagtta tctcaaaaga taataaatct gataacggtg aagcatcaac aatctcaact 300
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gcggctgctg ctcccaatgc caacgatgct gcagtaccac tcgtaacgcc ttctggaaca 420
caagataatt tgacctattc aaaaggcaaa gttcaagatt acatcttccg tacaactttt 480
caagatagct tccaaggaaa gatcattgcc aaatatgcaa cagataattt gaaagctaaa 540
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tattatactg aaactggtct gattacaaag caagcacgtg atatggggct tacccagcct 780
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gaaaaattcc tgaaagatta taaggctaag tatggtgaag agccaaatat gtttgccgct 960
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gatattgcaa caaacctagc taaattgaaa aactttaaag gtgtgacagg taaaatgaca 1080
attgataaga aacataaccc tgttaaatca gccgttatgg ttggtcttaa agatggtaaa 1140
gaagacacag ctactgctgt tgaagcaaaa taa 1173

<212> Type : DNA
<211> Length : 1173
SequenceName : SEQ ID 604
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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acttctaaaa aaacagccga caaaaaattg actgttgtgg ctaccaattc tattattgct 120
gatattacta agaatatcgc tggtaataag gttgtcttac atagtatcgt tcctgttggt 180
cgagatcctc acgaatatga gcctcttcct gaagatgtta aaaagacctc tcaggctgat 240
gtcatttttt ataatgggat taatcttgaa aatggaggca atgcttggtt taccaaacta 300
gttaaaaatg ctcataaaaa gacagacaag gattattttg cagtgagcga tagtgttaag 360
accatttatt tggaaaatgc aaaagaaaaa ggaaaggaag atcctcatgc ttggcttgac 420
cttaaaaatg gtattattta tgctaaaaat atcatgaaac gtctatctga aaaagatcct 480
aaaaacaaga gttattatca gaaaaatttt caagcctaca gcgccaaact tgaaaaacta 540
cacaaagtag ccaaagaaaa aatcagtcgt atccctactg agaagaaaat gatcgtaact 600
agtgaaggtt gtttcaagta tttctctaag gcttacgata ttccttctgc ctatatatgg 660
gaaattaata ccgaagaaga gggaacacca aatcaaatta aggctttagt gaaaaaatta 720
aggaaaagtc gggtgtctgc gctttttgta gaaagcagtg ttgatgatcg tccaatgaaa 780
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<212> Type : DNA
<211> Length : 921
SequenceName : SEQ ID 605
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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ctgcttcttt ttttattgcc tattgtgtca gtattggctt ttattgtgtt atttattggc 120
ggtggtacag ctgagtcttca tgatgtggaa gcgacgacag ggggcgttaa gctttcagct 180
aagcaatttg cagataagac aaagttagga atttcagaag aggaagctaa aaatgcctta 240
gcttttgcgg ataggttgat gtctcgtcat cattttacag ctcaagcaac tgctggagta 300
ttggctgttg gctttcgtga aagtggcttt gatgtcaaag cagttaataa ttctggtggt 360
gtagctggct ttttccaatg gtctggctgg ggtagttctg ttaatggtga tcgttggaaa 420
gtagctagta aaagagagtt aactctagag gttgaggtag atttgatgag cactgaacta 480
gatggtcgat atgctgatgt tgtcaaaaaa gttggttctg cgactgatga aaaacaggct 540
gctaaggatt ggtctcagta ttatgaaggt gttgcggtta gtgatggtca aacgaaagct 600
gataaaattg agagttgggc aacaactatt tgtgaggctt taaagtctgg tggtacaaat 660
tatgctaaag tgaataatac gggaacaagt tctactgcta tcccgcaggg ttgggaaaat 720
attagtgctt ttgatggcca tgcttatgaa ggtagtgaaa attatcctca aggacaatgc 780
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tttgtagagg ctgttaaaga tgatgggagt attctaatca gtgagatgaa cgtttatggt 1020
caaccagcta tgacggttgc ctatcggaca tttgatgctg aaactgctaa acaattttgg 1080
tatgtagagg gaaaataa 1098
<212> Type : DNA
<211> Length : 1098
SequenceName : SEQ ID 606
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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ttttgggtaa cgaagattgt aaaagctgac caagtcacaa attatacaaa tacggcttct 120
atcacaaaat cagatggtac agcactttct aatgatccat ctaaggctgt taattattgg 180
gaaccacttt ctttcagtaa ttctattact ttcccagatg aagtcagtat taaggctggg 240
gatactttaa ccattaagtt gccagagcaa ttacaattta cgactgctct aactttcgat 300
gttatgcata ccaatgggca attagctggt aaagcaacaa ctgatcctaa tacaggagaa 360
gtaacagtta cctttactga tatttttgaa aaactgccta atgataaggc tatgacatta 420
aattttaatg cacaattgaa tcataacaat atttctattc ctggtgttgt aaactttaac 480
tataataatg ttgcttatag ctcttatgtt aaagacaaag atattacgcc aataagtcca 540
gatgttaaca aagtgggtta tcaggataaa agtaatcctg gtttgattca ctggaaagtt 600
ctcattaaca acaaacaagg tgctattgat aatttgactt tgactgatgt tgtcggagaa 660

gatcaagaaa tcgtaaaaga ttccttggtt gctgcacgct tgcagtacat tgctggtgat 720
gatgttgaca gtttagatga agctgcttcg cgaccttatg ctgaggattt ttcaaaaaat 780
gttacttatc aaactaatga tttaggattg acaacaggat ttacctatac aattccagga 840
tccagtaaca acgctatctt tatctcttat actactcgtt taacttcttc tcaatctgct 900
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gcagaaacaa caactgttac tgaaacaaca acttcgtcat cttctgaaac gacaactagt 1080
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actagcacaa caggagcttc aacaacacaa acaaaaacga ctgcttctca aacgaatgtt 1200
ccgacaacaa caaacataac aacaacttca aaacaagtaa ccaagcaaaa agcgaaattt 1260
gttttaccat caacaggtga acaagcaggg cttttgttaa ctactgtagg tcttgtaatt 1320
gttgctgtgg caggtgtcta tttctataga acacgtcgtt aa 1362
<212> Type : DNA
<211> Length : 1362
SequenceName : SEQ ID 607
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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gcttgcagtt cttctaattc aaaaaattta caggatgata ttaaagaaaa gaaaaagtta 120
gttgttgctg ttagtccgga ctatgctcct tttgagttca aggctcttgt gaacggtaag 180
gatactgttg ttggtgctga tattgatttg gcaaaagcaa ttgctaaaga attgggagtg 240
aaactggaat tatcttccat gagttttgat aatgtcttgt ccagtttaaa aacaggaaaa 300
gcagacatag ctatctctgg tttatcttat accaaggaac gtgctcaagc ctatgacttt 360
tcagaagctt attataaaac ggaaaatgct attcttatta aaaagtctga tttgaacaaa 420
tatacaatga tttcttcttt taataataag actaaagtag ctgttcaaaa aggaacgatt 480
gaagaaggat tagctaaaaa tcaattaaaa caatcaaaca ttacctcttt gacttcgatg 540
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gtggcagaag gttatgtgtc tcaaaatagt gatttggttc ttgccaaagt tgccttaaaa 660
acgggtgaag gggatgccaa agcagttgct ctgcctaaag acagtggtca attagttaag 720
acggtgaata aggttattaa gaaactcaaa aaagaagata aatacaagca gtttatcagc 780
gatgctgtta aattaactgg tcagcaagtg gattga 816
<212> Type : DNA
<211> Length : 816
SequenceName : SEQ ID 608
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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tgttccaatc tttccgattc tggacagagg aattgggata agataaataa gagaggaatg 120
cttaaaattg ctactgcagg aacgctttat ccgcaatctt atcatgatga tcataataaa 180
ttgacgggtt atgatgttga aattctaaaa gaaataggaa aacgtttggg attgaaagtt 240
cagtttactg aaatgggtgt cgatggtatg ctgacagcca tcaagagcgg tcagatcgat 300
gttgctaatt attccctaga agacggcaac aaaaatatca gtaagttttt gagaacctct 360
ccctataaat attcttttac gtcaatggtt gtccgctcta aagatgattc aggtattcat 420
tcttggtcag accttaaggg aaaaaaagct gccggagctg ccagcactaa ttatatgaag 480
attgctaaaa aattaggagc aaaattagtt gtctatgata atgtcaccaa cgatgtttat 540
atgaaagatt tagttaatgg tcgtacagat gtcattatca atgattatta tctgcaaaag 600
atagctgttg cagcagtcaa agacaaatac gctatcaaaa taaaccaagg actttatgcc 660
aatccttaca gcactagttt tacattgtct ttgaaaaaca aagtactgca aaagaaaatc 720
aataaggctg tgaaagacat gcgcaaggat ggcaccctaa ccaagctatc taagaagttt 780
ttccaaggag aagacgtcac taaaaaacat tataatagct ataaaaaaat tgatatttct 840
gacgttgatt aa 852
<212> Type : DNA
<211> Length : 852
SequenceName : SEQ ID 609
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6

<400> PreSequenceString :
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gggaccagta cagtatttgc agatgattct gaaggatggc agtttgtcca agaaaatggt 120
agaacctact acaaaaaggg ggctctaaaa gaaacctact ggagagtgat agatgggaag 180
tactattatt ttgatccttt atccggagag atggttgtcg gctggcaata tatacctgct 240
ccacacaagg gggttacgat tggtccttct ccaagaatag agattgctct tagaccagat 300
tggttttatt ttggtcaaga tggtgtctta caagaatttg ttggcaagca agttttagaa 360
gcaaaaactg ctacgaatac caacaaacat catggggaag aatatgatag ccaagcagag 420
aaacgagtct attattttga agatcagcgt agttatcata ctttaaaaac tggttggatt 480
tatgaagagg gttattggta ttatttacag aaggatggtg gctttgattc tcgcatcaac 540
agattgacgg ttggagagct agcacgtggt tgggttaagg attaccctct tacgtatgat 600
gaagagaagc taaaagcagc tccatggtac tatctagatc cagcaactgg ctggcaaaac 660
cttgggaaca aatggtacta tctccgttca tcaggagcta tggcaactgg ttggtatcag 720
gaaggttcga cttggtacta tctaaatgca agtaatggag atatgaaaac aggctggttc 780
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gtaggtggtt actacttaaa ctataatggt gaatgggtta agtaa 885
<212> Type : DNA
<211> Length : 885
SequenceName : SEQ ID 610
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :
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gctacaaata cggtatttgc gaataccaca ggtggccgat ttgttgataa ggataataga 120
aaatattatg taaaagatga tcataaagca atctattggc ataaaataga cggtaaaact 180
tactattttg gtgatattgg agagatggtt gtcggttggc aatacttaga aattcctgga 240
acaggttatc gtgataattt attcgataac caaccagtta atgaaattgg ccttcaggag 300
aagtggtact attttggaca agatggtgct ttgctagaac aaacagataa acaagtacta 360
gaggcaaaaa cgtctgaaaa tacaggaaaa gtatacggtg aacaatatcc tctatctgct 420
gaaaagagaa cttattattt tgataataat tatgctgtaa agacaggctg gatttatgaa 480
gacggcaatt ggtattattt aaataagcta ggaaattttg gcgatgattc ttacaatcca 540
ctaccaattg gtgaagttgc taagggttgg actcaagatt ttcatgttac tattgacatt 600
gatagaagca aacctgctcc atggtactac ctagatgctt caggtaagat gcttacagat 660
tggcaaaaag taaacggaaa atggtattat tttggctcct ctggttctat ggcaacaggt 720
tggaaatatg tacgaggcaa atggtattac ttagataata aaaatggtga tatgaaaaca 780
ggatggcaat accttggtaa caagtggtac tacctccgtt catcaggagc tatggtaact 840
ggctggtatc aagatggttt aacttggtac tacctaaatg caggtaatgg agacatgaag 900
acaggttggt tccaggtcaa tggcaaatgg tactatgctt atagctcagg tgccttggca 960
gtgaatacga ccgtagatgg ctattctgtc aactataatg gcgaatgggt tcaataa 1017

<212> Type : DNA
<211> Length : 1017
SequenceName : SEQ ID 611
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :
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tttgttgcgt ctcagcctac tgttgtaaga gcagaagaat ctcccgtagc cagtcagtct 120
aaagctgaga aagactatga tgcagcgaag aaagatgcta agaatgcgaa aaaagcagta 180
gaagatgctc aaaaggcttt agatgatgca aaagctgctc agaaaaaata tgacgaggat 240
cagaagaaaa ctgaggagaa agccgcgcta gaaaaagcag cgtctgaaga gatggataag 300
gcagtggcag cagttcaaca agcgtatcta gcctatcaac aagctacaga caaagccgca 360
aaagacgcag cagataagat gatagatgaa gctaagaaac gcgaagaaga ggcaaaaact 420
aaatttaata ctgttcgagc aatggtagtt cctgagccag agcagttggc tgagactaag 480
aaaaaatcag aagaagctaa acaaaaagca ccagaactta ctaaaaaact agaagaagct 540
aaagcaaaat tagaagaggc tgagaaaaaa gctactgaag ccaaacaaaa agtggatgct 600
gaagaagtcg ctcctcaagc taaaatcgct gaattggaaa atcaagttca tagactagaa 660
caagagctca aagagattga tgagtctgaa tcagaagatt atgctaaaga aggtttccgt 720
gctcctcttc aatctaaatt ggatgccaaa aaagctaaac tatcaaaact tgaagagtta 780
agtgataaga ttgatgagtt agacgctgaa attgcaaaac ttgaagatca acttaaagct 840
gctgaagaaa acaataatgt agaagactac tttaaagaag gtttagagaa aactattgct 900

gctaaaaaag ctgaattaga aaaaactgaa gctgaccttа agaaagcagt taatgagcca 960
gaaaaaccag ctccagctcc agaaactcca gccccagaag caccagctga acaaccaaaa 1020
ccagcgccgg ctcctcaacc agctcccgca ccaaaaccag agaagccagc tgaacaacca 1080
aaaccagaaa aaacagatga tcaacaagct gaagaagact atgctcgtag atcagaagaa 1140
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aaaacaggct ggaaacaaga aaacggtatg tggtacttct acaatactga tggttcaatg 1260
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gcaacaggtt gggctaaagt caacggttca tggtactacc tcaacgctaa tggtgctatg 1560
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gctacaggtt gggctaaagt caacggttca tggtactacc tcaacgctaa tggtgctatg 1680
gcaacaggtt gggtgaaaga tggagatacc tggtactatc ttgaagcatc aggtgctatg 1740
aaagcaagcc aatggttcaa agtatcagat aaatggtact atgtcaatgg tttaggtgcc 1800
cttgcagtca acacaactgt agatggctat aaagtcaatg ccaatggtga atgggtttaa 1860

<212> Type : DNA
<211> Length : 1860
SequenceName : SEQ ID 612
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :
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aagcttgttc ctttttagt agtaggattg atgctagcag ctggtgatag tgtctatgcc 120
tattccagag gaaatggatc gattgcgcgt ggggatgatt atcctgctta ttataaaaat 180
gggagccagg agattgatca gtggcgcatg tattctcgtc agtgtacttc ttttgtagcc 240
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gatcagattg agattgagga atataactat ggttatacag aatcctataa taaacgagtt 480
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tggtattatc tgggtagttc aggggcaatg aaaacaggct ggtaccaggt ctctggtgag 1260
tggtattatt cttactcttc aggcgcctta gctattaata cgacggtgga tggctacaga 1320
gtaaacagtg atggagaacg agtatag 1347

<212> Type : DNA
<211> Length : 1347
SequenceName : SEQ ID 613
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :
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gtagctagtg tagctgttgc cagtcttgtt atgggaagtg tggttcatgc gacagagaac 120
gagggaagta cccaagcagc cacttcttct aatatggcaa agacagaaca taggaaagct 180
gctaaacaag tcgtcgatga atatatagaa aaaatgttga gggagattca actagataga 240
agaaaacata cccaaaatgt cgccttaaac ataaagttga gcgcaattaa aacgaagtat 300
ttgcgtgaat taaatgtttt agaagagaag tcgaaagatg agttgccgtc agaaataaaa 360
gcaaagttag acgcagcttt tgagaagttt aaaaaagata cattgaaacc aggagaaaag 420
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gaagatcgtc gtaactaccc aaccaatact tacaaaacgc ttgaacttga aattgctgag 540

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gaacctcgag acgaggaaaa aattaagcaa gcaaaagcga aagttgagag taaaaaagct 1140
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atgaaagcaa gccaatggtt caaagtatca gataaatggt actatgtcaa tggctcaggt 2040
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aactaa 2106

<212> Type : DNA
<211> Length : 2106
SequenceName : SEQ ID 614
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :

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agttcggaag taatcaaaga gactaaagtt ggaagtatta ttcaacaaaa taatatcaaa 180
tataaggttc taactgtaga aggtaacata ggaactgttc aagtgggtaa tggagttact 240
cctgtagagt ttgaagctgg tcaagatgga aaaccattca cgattcctac aaaaatcaca 300
gtaggtgata aagtatttac cgttactgaa gtagctagtc aagcttttag ttattatcca 360
gatgaaacag gtagaattgt ctactatcct agctctatta ctatcccatc aagcataaaa 420
aaaatacaaa aaaaaggctt ccatggaagt aaagctaaaa ctattatttt tgacaaaggc 480
agtcagctgg agaaaattga agatagagct tttgattttt ctgaattaga agagattgaa 540
ttgcctgcat ctctagaata tattggaaca agtgcatttt cttttagtca aaaattgaaa 600
aagctaacct tttcctcaag ttcaaaatta gaattaatat cacatgaggc ttttgctaat 660
ttatcaaatt tagagaaact aacattacca aaatcggtta aaacattagg aagtaatcta 720
tttagactca ctactagctt aaaacatgtt gatgttgaag aaggaaatga atcgtttgcc 780
tcagttgatg gtgttttgtt ttcaaaagat aaaactcaat taatttatta tccaagtcaa 840
aaaaatgacg aaagttataa aacgcctaag gagacaaaag aacttgcatc atattcgttt 900
aataaaaatt cttacttgaa aaaactcgaa ttgaatgaag gtttagaaaa aatcggtact 960
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gttaaaaatt ttggtaaaca cgttatgaac ggtttaccaa aatttttaac attatctggt 1140
aataatatca actcattgcc gtccttcttc ctaagtggcg tcttagattc attaaaggaa 1200
attcatatta agaataaaag tacagagttt tctgtgaaaa aagatacatt tgcaattcct 1260
gaaactgtta agttctatgt aacatcagaa catataaaag atgttcttaa atcaaattta 1320
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gctaaaccta aaaagaattc taatcaggga gtagttggtt gggttaaaga caaaggttta 1440
tggtattact taaacgaatc aggttcaatg gctactggtt gggttaaaga caaaggttta 1500
tggtattact taaacgaatc aggttcaatg gctactggtt gggttaaaga caaaggttta 1560
tggtattact taaatgaatc aggttcaatg gctactggtt gggttaaaga caaaggctta 1620
tggtattact taaacgaatc aggttcaatg gctactggtt gggttaaaga caaaggctta 1680
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tggtattact taaacgaatc aggttcaatg gctactggtt gggttaaaga caaaggctta 1860

tggtattact taaacgaatc aggttcaatg gctactggtt gggttaaaga caaaggctta 1920
tggtattact taaatgaatc aggttcaatg gctactggtt gggttaaagt ttctggtaaa 1980
tggtactata cctataattc aggagattta ttagtaaaca cgactacacc cgatggctat 2040
cgagtcaatg ctaacggtga gtgggtagga tag 2073

<212> Type : DNA
<211> Length : 2073
SequenceName : SEQ ID 615
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :
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aggcaagtac acgcacactc aactgggaat ccgcattcaa ccgtacagaa tgaagcggat 120
tatcactggc ggaaagaccc agaattaggt tttttctcgc acattgttgg gaacggttgc 180
atcatgcagg taggacctgt tgataatggt gcctgggacg ttgggggcgg ttggaatgct 240
gagacctatg cagcggttga actgattgaa agccattcaa ccaaagaaga gttcatgacg 300
gactaccgcc tttatatcga actcttacgc aatctagcag atgaagcagg tttgccgaaa 360
acgcttgata cagggagttt agctggaatt aaaacgcacg agtattgcac gaataaccaa 420
ccaaacaacc actcagacca cgttgaccct tatccatatc ttgctaaatg gggcattagc 480
cgtgagcagt ttaagcatga tattgagaac ggcttgacga ttgaaacagg ctggcagaag 540
aatgacactg gctactggta cgtacattca gacggctctt atccaaaaga caagtttgag 600
aaaatcaatg gcacttggta ctactttgac agttcaggct atatgcttgc agaccgctgg 660
aggaagcaca cagacggcaa ctggtactgg ttcgacaact caggcgaaat ggctacaggc 720
tggaagaaaa tcgctgataa gtggtactat ttcaacgaag aaggtgccat gaagacaggc 780
tgggtcaagt acaaggacac ttggtactac ttagacgcta aagaaggcgc catggtatca 840
aatgccttta tccagtcagc ggacggaaca ggctggtact acctcaaacc agacggaaca 900
ctggcagaca ggccagaatt cacagtagag ccagatggct tgattacagt aaaataa 957

<212> Type : DNA
<211> Length : 957
SequenceName : SEQ ID 616
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
atgactttcg cctattggtg tattctgatt gcctacctat tgccgctttt ttgtgcggcg 60
tatgccaaaa aagcgggcgg attccggttt aaagacaacc acaatccgcg cgattttctg 120
gcgcgcacgc aaggcacagc cgcccgtgcc cacgccgcgc agcaaaacgg ttttgaagcc 180
tttgcaccgt ttgcagccgc cgttttgacg gcacacgcaa ccggcaatgc cggacaagca 240
accgtcaaca cgcttgccgg cctgttcatc ctgttccgcc tcgcctttat ctggtgctac 300
atcgcagaca aagcagcatt acgctcgctg atgtgggtgg gcggatttgt ctgcaccgtc 360
gggctgtttg tcgtggctgc ttga 384

<212> Type : DNA
<211> Length : 384
SequenceName : SEQ ID 617
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
atgaacaaaa tataccgcat catttggaat agtgccctca atgcctgggt cgccgtatcc 60
gagctcacac gcaaccacac caaacgcgcc tccgcaaccg tgaagaccgc cgtattggcg 120
acactgttgt ttgcaacggt tcaggcgaat gctaccgatg aagatgaaga agaagagtta 180
gaatccgtac aacgctctgt cgtagggagc attcaagcca gtatggaagg cagcggcgaa 240
ttggaaacga tatcattatc aatgactaac gacagcaagg aatttgtaga cccatacata 300
gtagttaccc tcaaagccgg cgacaacctg aaaatcaaac aaaacaccaa tgaaaacacc 360
aatgccagta gcttcaccta ctcgctgaaa aaagacctca caggcctgat caatgttgaa 420
actgaaaaat tatcgtttgg cgcaaacggc aagaaagtca acatcataag cgacaccaaa 480
ggcttgaatt tcgcgaaaga aacggctggg acgaacggcg acaccacggt tcatctgaac 540
ggtatcggtt cgactttgac cgatacgctt gcgggttctt ctgcttctca cgttgatgcg 600
ggtaaccaaa gtacacatta cactcgtgca gcaagtatta aggatgtgtt gaatgcgggt 660
tggaatatta agggtgttaa aactggctca acaactggtc aatcagaaaa tgtcgatttc 720

gtccgcactt acgacacagt cgagttcttg agcgcagata cgaaaacaac gactgttaat 780
gtggaaagca aagacaacgg caagagaacc gaagttaaaa tcggtgcgaa gacttctgtt 840
attaaagaaa aagacggtaa gttggttact ggtaaaggca aaggcgagaa tggttcttct 900
acagacgaag gcgaaggctt agtgactgca aaagaagtga ttgatgcagt aaacaaggct 960
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ttaagcgtgg atgacgaggg cgcgttgaat gtcggcagca aggatgccaa caaacccgtc 1440
cgcattacca atgtcgcccc gggcgttaaa gagggggatg ttacaaacgt cgcacaactt 1500
aaaggcgtgg cgcaaaactt gaacaaccgc atcgacaatg tggacggcaa cgcgcgtgcg 1560
ggcatcgccc aagcgattgc aaccgcaggt ctggttcagg cgtatctgcc cggcaagagt 1620
atgatggcga tcggcggcgg cacttatcgc ggcgaagccg gttacgccat cggctactcc 1680
agtatttccg acggcggaaa ttggattatc aaaggcacgg cttccggcaa ttcgcgcggc 1740
catttcggtg cttccgcatc tgtcggttat cagtggtaa 1779
<212> Type : DNA
<211> Length : 1779
SequenceName : SEQ ID 618
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
attcttttgg ctgaaggtca aaaatcagcc gtcaccgagt attacctgaa tcacggcaca 60
tggcccagca acaacagtga tgccggcgtg gcatccaccg ccaccgacat caaaggaaaa 120
tatgttaaag aagttaaagt cgaaaaaggc gtcattaccg ccacaatgct ttcaagcggc 180
gtaaacaacg aaatcaaagg caaaaaactc tccctgtggg ccaagcgtca agccggttcg 240
gtaaaatggt tctgcggaca gccggttgag cgcgccgcca acaacgccgc caacgacgcc 300
gtcaccgccg ccaccgccaa cggcaacggc aagatcgaca ccaaacacct gccgtcaacc 360
tgccgcgacg cagcatctgc cgtttgcata gaaacaccac ctacggcttt ctataaaaat 420
acctaa 426
<212> Type : DNA
<211> Length : 426
SequenceName : SEQ ID 619
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
atgaaaacaa ccgacaaacg gacaaccgaa acacaccgca aagccccgaa aaccggccgc 60
atccgcttct cgcctgctta cttagccata tgcctgtcgt tcggcattct tccccaagct 120
tgggcgggac acacttattt cggcatcaac taccaatact atcgcgactt tgccgaaaat 180
aaaggcaagt ttgcagtcgg ggcgaaagat attgaggttt acaacaaaaa aggggagttg 240
gtcggcaaat caatgacaaa agccccgatg attgattttt ctgtggtgtc gcgtaacggc 300
gtggcggcat tggtgggcga tcaatatatt gtgagcgtgg cacataacgg cggctataac 360
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gtgaaaagaa ataattataa gcctgacaat tcacaccctt acaacggcga ttaccatatg 480
ccgcgtttgc ataaatttgt cacagatgca gaacctgtcg aaatgacgag tgacatgagg 540
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caagccaaag gggaaaacca aggctcgatc agcgtgggcg acggtacagt cattttggat 1440
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gaaaatgtcg gcattatgca ggcggaggaa gagaaaaaac gggtgcaggc ggataaagac 3360
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ctgtcctata ccgatgccgc ttcgggcaaa gtccgaacac gcgtcaatac cgccgtattg 4200
gctcaggatt tcggcaaaac ccgcagtgcg gaatggggcg taaacgccga aatcaaaggt 4260
ttcacgctgt ccctccacgc tgccgccgcc aaaggcccgc aactggaagc gcaacacagc 4320
gcgggcatca aattaggcta ccgctggtaa 4350

<212> Type : DNA
<211> Length : 4350
SequenceName : SEQ ID 620
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :

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ggcattttgg cggcagtcgc ccttcctgct tatcaagact acacagcccg cgcacaagtt 120
tccgaagcca ttcttttagc cgaaggtcaa aaatcagccg tcaccgagta ttacctgaat 180
cacggcgaat ggcccagcaa caacacttct gccggcgtgg catcctccac cgacattaaa 240
ggcaaatatg ttcaaagcgt tgaagtcaaa aacggcgtcg ttaccgccac aatggcttca 300
agcaacgtaa acaacgaaat caaaggcaaa aaactctccc tgtgggccaa gcgtcaagac 360
ggttcggtaa aatggttctg cggacagccg gttaagcgca acgacaccgc caccaccaac 420
gacgacgtca aagccgacac cgccgccaac ggcaagcaga tcgacaccaa gcacctgccg 480

tcaacctgcc gcgacgcagc atctgccgga taa 513
<212> Type : DNA
<211> Length : 513
SequenceName : SEQ ID 621
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
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acactgacag gtattccatc gcatggcgga ggtaaacgct ttgcggtcga acaagaactt 120
gtggccgctt ctgccagagc tgccgttaaa gacatggatt tacaggcatt acacggacga 180
aaagttgcat tgtacattgc aactatgggc gaccaaggtt caggcagttt gacaggggat 240
cgctactcca ttgatgcact gattcgtggc gaatacataa acagccctgc cgtccgtacc 300
gattacacct atccacgtta cgaaaccacc gctgaaacaa catcaggcgg tttgacaggt 360
ttaaccactt ctttatctac acttaatgcc cctgcactct cgcgcaccca atcagacggt 420
agcggaagta aaagcagtct gggcttaaat attggcggga tgggggatta tcgaaatgaa 480
accttgacga ctaacccgcg cgacactgcc tttctttccc acttggtaca gaccgtattt 540
ttcctgcgcg gcatagacgt tgtttctcct gccaatgccg atacggatgt gtttattaac 600
atcgacgtat tcggaacgat acgcaacaga accgaaatgc acctatacaa tgccgaaaca 660
ctgaaagccc aaacaaaact ggaatatttc gcagtagaca gaaccaataa aaaattgctc 720
atcaaaccaa aaaccaatgc gtttgaagct gcctataaag aaaattacgc attgtggatg 780
ggaccgtata aagtaagcaa aggaattaaa ccgacagaag gattaatggt cgatttctcc 840
gatatccaac catacggcaa tcatatgggt aactctgccc catccgtaga ggctgataac 900
agtcatgagg ggtatggata cagcgatgaa gcagtgcgac gacatagaca agggcaacct 960
tga 963
<212> Type : DNA
<211> Length : 963
SequenceName : SEQ ID 622
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
atgcgcccaa tcttcctatc tttcgtttta ttccctattt tgataaccgc ctgcagcaca 60
ccggacaagt ctgcccgatg ggaaaatatc ggcacaatct caaacggcaa tattcataca 120
tatatcaata aagacagcgt gagaaaaaac ggaaatctga tgattttcca agataaaaaa 180
gttgttacca atctaaaaca agaacgtttt gccaacaccc ccgcatacaa gactgccatt 240
gccgagtggg aaatccactg caacaacaaa acataccgct taagttcgct acaattgttt 300
gatacaaaaa acacggaaat ttccacacaa aactacacag cctcttccct ccgcccgatg 360
agcatcctgt ccgggacatt aaccgaaaaa caatatgaaa ccgtatgcgg aaaaaaactc 420
tga 423
<212> Type : DNA
<211> Length : 423
SequenceName : SEQ ID 623
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
atgaacaaac ttttcattac cgccctgtcc gccctcgcct tgtccgcctg cgccggcact 60
tgggagggcg cgaaacaaga caccgcccgc aaccttgaca aaacacaggc cgccgccgaa 120
cgcgccgccg aacaaacagg caacgccgtc gaaaaaggct gggacaaaac caaagaagcc 180
gtcaaaaaag gcggcaatgc cgtcggacgc ggcatttccc atctcggcgg aaaaatcgaa 240
aacgccaccg aataa 255
<212> Type : DNA
<211> Length : 255
SequenceName : SEQ ID 624
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :

atgaaactcc tcttcatccc cctagtcctc ttcgtcgccg tcgaacattt ctacatcgcc 60
tggcttgaaa tgacgcagat tcccagcgaa aaagcggcgg aaacgttcaa gctgccttat 120
gaatttatgg aacaaaatcg cgtgcagacc ctgttcggca accaagggct gtataacggc 180
tttctcggca tcgggctggt gtggtcgcgg tttgccgctc cggataacgc ggtgtacggc 240
gcaacggtac tgtttctcgg cttcgtcctg attgccgccg cgtggggcgc gttctcttcc 300
ggcaacaaag gcatactcgt caaacaaggt ttgcccgcat ttttggcagc ggcggcggtg 360
ttggcggtat ga 372
<212> Type : DNA
<211> Length : 372
SequenceName : SEQ ID 625
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
atggcttcaa gcaacgtaaa caacgaaatc aaagacaaaa aactctccct gtgggccaag 60
cgtcaagacg gttcggtaaa atggttctgc ggacagccgg ttaagcgcga cgccgccacc 120
gacgccgacg tcaccgccga cagcggcaac gaaatcgaca ccaagcacct gccgtcaacc 180
tgccgcgacg cagcatctgc cgtttgcaca aaaacacccg agtattaccc gaatcacggc 240
gaatggccga aaaacttcgt cattcccgcg caggcgggaa tccaggtctg tcggcacgga 300
aacttatcgg gtaaaaaggt ttctccggtc ctgagttcta gattcccact ttcgtgggaa 360
tga 363
<212> Type : DNA
<211> Length : 363
SequenceName : SEQ ID 626
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
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tggcccagca acaacacttc tgccggcgtg gcaacctcca ccgacattaa aggcaaatat 120
gttcaaagcg ttgaagtcaa aaacggcgtc gttaccgcca caatggcttc aagcaacgta 180
aacaacgaaa tcaaaggcaa aaaactctcc ctgtgggcca agcgtcaaga cggttcggta 240
aaatggttct gcggacagcc ggttaagcgc aacgacaccg ccaccaccaa cgacgacgtc 300
aaagccgaca ccgccgccaa cggcaagcag atcgacacca agcacctgcc gtcaacagca 360
tcgacaagaa aatcgacacc aaactag 387
<212> Type : DNA
<211> Length : 387
SequenceName : SEQ ID 627
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
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tttgcggcag accccgcgcc gcagtccgcc caaacgctga acgaaatcac cgttaccggc 120
acgcacaaaa cccaaaaact cggcgaagaa aaaatccgcc gcaaaacttt agacaagctc 180
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ggcagggcgg gttctaacgg ctttaccata cgcggcgtgg acaaagaccg cgtcgccatc 300
aacgttgacg ggctggcgca ggcggaaagc cgctcttccg aagccttcca agaattgttc 360
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gtaaccatca ccaaaggcgc ggactcgctc aaatccggca gcggcgcatt gggcggcgca 480
gtcaattacc aaaccaaatc cgcaagcgat tatgtttccg aagacaagcc ctaccatttg 540
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gagctgtcta atttgtggac gggtacgacc acgtctgccg caacgggcga ctaccgccac 960
cgccaagacg tgagctaccg ccgccgctcc ggtgtcgaat acaaaaacga attggaacac 1020
ggcccgtggg acagccttaa gctgcgctac gacaagcagc gcatcgatat gaacacttgg 1080
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gtttcgtcag acgataaaaa caaccccaga tacgccccgc tttcagacgg tacggcattg 1860
gtcagctcgc ccgtttggca aaaccaaaac cgctccgccg cctgggtgaa aggcatagag 1920
tttaacggca cgtggaacct cgacagtatc ggtttgccca aagggctgca caccggcctc 1980
aacgtcagct acatcaaggg caaggcaacg caaaacaacg gcaaagaaac gcccatcaac 2040
gcgctttcgc cgtggacggc ggtttacagc ctgggctatg acgcgccttc caaacgctgg 2100
ggcatcaacg cctacgccac gcgcaccgcc gccaaaaagc cgtccgacac cgtccacagc 2160
aacgacgact tgaacaaccc gtggccttat gccaaacaca gcaaggccta tacgctgttc 2220
gacctttccg cctacctcaa catcggcaaa caggttacgc tccgcgccgc cgcgtacaac 2280
attaccaaca agcagtacta cacttgggaa tctttacgca gcatccgcga gttcggcacg 2340
gtcaaccgcg ttgacaacaa aacccacgcc ggcatccaac gctttacctc gccgggcagg 2400
agctacaatt tcaccatcga agcgaagttc taa 2433

<212> Type : DNA
<211> Length : 2433
SequenceName : SEQ ID 628
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
atgaaaaaat ccctgattgc cctgactttg gcagcccttc ctgttgcagc aatggctgac 60
gttaccctgt acggcaccat caaaaccggc gtagaaactt cccgctctgt agaacacaat 120
ggaggtcagg tggttagcgt tgaaaccggt accggcatcg ttgatttggg ttcgaaaatc 180
ggcttcaaag gccaagaaga cctcggtaac ggcctgaaag ccatttggca ggttgagcaa 240
aaggcatcta tcgccggcac tgactccggt tggggcaacc gccaatcctt catcggcttg 300
aaaggcggct tcggtaaatt gcgcgtcggc cgtttgaaca gcgtcctgaa agacaccggc 360
gacatcaatc cttgggatag caaaagcgac tatttgggtg taaacaaaat tgccgaaccc 420
gaagcacgcc tcatttccgt acgctacgat tctcccgaat ttgccggcct cagcggcagc 480
gtacaatacg cgcttaacga caatgtaggc agacataaca gcgaatctta ccacgccggc 540
ttcaactaca aaaacggcgg cttcttcgtg caatatggcg gtgcctataa aagacatcag 600
gatgtggatg acgtgaagat tgagaaatac cagattcacc gtttggtcag cggttacgac 660
aatgatgccc tatacgcttc cgtagccgta cagcaacaag acgcgaaact ggttgaagac 720
aattcgcaca actctcaaac cgaagttgcc gctaccttgg cataccgctt cggcaacgta 780
acgccccgcg tttcttacgc ccacggcttc aaaggctcgg ttgatgatgc aaaacgcgac 840
aatacttacg accaagtggt tgtcggtgcg gaatacgact tctccaaacg cacttctgcc 900
ttggtttctg ccggttggtt gcaagaaggc aaaggcgaaa acaaattcgt agcgactgcc 960
ggcggtgtcg gtctgcgcca caaattctaa 990

<212> Type : DNA
<211> Length : 990
SequenceName : SEQ ID 629
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
atgaaaaccc tgctcctcct catccccctc gtcctcacag cctgcggcac actgaccggc 60
atacccgccc acggcggcgg caaacgcttt gccgtcgaac aagaactcgt cgccgcatcg 120
tcccgcgccg ccgtcaaaga aatggacttg tccgccctga aaggacgcaa agccgccctt 180
tacgtctccg ttatgggcga ccaaggttcg ggcaacataa gcggcggacg ctactctatc 240
gacgcactga tacgcggcgg ctaccacaac aaccccgaaa gtgccaccca atacagctac 300
cccgcctacg acactaccgc caccaccaaa tccgacgcgc tctccagcgt aaccacttcc 360
acatcgcttt tgaacgcccc cgccgccgcc ctgacgaaaa acagcggacg caaaggcgaa 420
cgctccgccg gactgtccgt caacggcacg ggcgactacc gcaacgaaac cctgctcgcc 480
aacccccgcg acgtttcctt cctgaccaac ctcatccaaa ccgtcttcta cctgcgcggc 540
atcgaagtcg taccgcccga atacgccgac accgacgtat tcgtaaccgt cgacgtattc 600

ggcaccgtcc gcagccgcac cgaactgcac ctctacaacg ccgaaaccct taaagcccaa 660
accaagctcg aatatttcgc cgttgaccgc gacagccgga aactgctgat tgcccctaaa 720
accgccgcct acgaatccca ataccaagaa caatacgccc tctggatggg accttacagc 780
gtcggcaaaa ccgtcaaagc ctcagaccgc ctgatggtcg atttctccga catcaccccc 840
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gatgtcggca acgaagtcat ccgccgccgc aaaggaggat aa 942

<212> Type : DNA
<211> Length : 942
SequenceName : SEQ ID 630
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
atgaataaaa ccttgtctat tttgccggtg gcaatcttac tcggcggctg cgccgccggg 60
ggcggtaaca cattcggcag cttagacggc ggcacaggta tgggcggcag catcgtcaaa 120
atggcggtag aaagccaatg ccgtgcggaa ttgaacaaac gcagcgaatg gcgtttgacc 180
gcgctggcga tgagtgccga aaaacaggcg gaatgggaaa acaagatttg cgcttgcgtc 240
gcccaagaag cacccaacca gctgaccggc aacgatgtga tgcagatgct ggatccgtcc 300
acgcgcaatc aggcacttgc cgccctgacc gccaaaacgg tttccgcctg cttcaaacac 360
ctgtaccgct aa 372

<212> Type : DNA
<211> Length : 372
SequenceName : SEQ ID 631
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
atgaatccac ttattcatca agcaaaggaa tcatctatgc aaacccgcat cctctccgcc 60
gtactgctgg ctttttcaac cgctgccttt gccgggggcg cattcacgct gcaattcgac 120
aacccgtccg aagacggcgg cttcacgcaa aaccagattt tgagcgcgcc ttacggcttt 180
ggctgttcgg gcggcaatgc ttcgcccgcg ctgtcgtgga aaaatccgcc cgccgggaca 240
aaaagtttcg tcctgaccgt ttacgataaa gacgcgccga ccggactggg ctggatgcac 300
tgggtggtcg ccgacattcc cgccgatgtc cgccgccgca atgcgacctc gctgcaatta 360
agccgctgcg ccagcatcgc cgacgaccag tccgcagcca tatcggcagt aatcagtttg 420
cagatttgcc gcatcaggtt gacgccttcg tacacggcaa aaccgatgcc gtcatgctgc 480
aaccacgcca acacgccgca aagcgcggcc tccgccgcat tgtgcggcac ttcttcatcc 540
gtcagcaccg ccgccgcata a 561

<212> Type : DNA
<211> Length : 561
SequenceName : SEQ ID 632
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
atgaataaaa ctttaaaaag gcgggttttc cgccataccg cgctttatgc cgccatcttg 60
atgttttccc ataccggcgg gggggggggg gcgatggcgc aaacccgtca atacgctatt 120
atcatgaacg agagaaacca gcccgaggta cagtggaatg ggtcatattc aataaaggac 180
aaagacagga agcgcgaata tactcatcat aatcaccaac aaggaggaag ctctgtctca 240
ttcaacaata gcgatgagct tgtttctcga caaagcggta ctgccgtttt tggcacagcc 300
acctacctgc cgccctacgg caaggtttcc ggttttgatg ccgccgctct gaaagagcgc 360
aacaatgccg tcgattggat tcataccacc cacccagggt tgataggcta cagctacgac 420
ggtgtcgtat gcagaagcgc cacagactgt cccaaacttg tctataaaac ccgattttcc 480
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ttgggtgccg agggtatcgc caaaaatggt aagacaatca acaaattggt atcttctttt 660
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aagtgggaca ttaaagatac cgggcagatt ccagtcaagc tcagcttgac gcaagtcaaa 960
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caagacaagc aaaaacactt ctttatgttc ggcgcaatgg gccttggcgg cagaggcgca 1860
tacgccttgg atttgaccaa agccgacgac aatgacccga caaaagcctc tttgtttgat 1920
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tgcttctccg gaaaaggggt gcgcaccctg ctgatgaacg atttggacag cttggatatt 3060
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<212> Type : DNA
<211> Length : 3114
SequenceName : SEQ ID 633
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
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cccctgccgg ttgtaaccag cttcagcatt ttaggcgacg tagccaaaca aatcggcgga 120
gagcgcgtat ccatacaaag tttggtcgga gccaaccaag atacgcacgc ctatcatatg 180
accagcggcg acattaaaaa aatccgcagt gcaaaactcg tcctgattaa cggcttagga 240
cttgaagctg ccgacatcca acgtgccgtc aaacagagca aagtatccta tgccgaagcg 300
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aaggccgacc ccgaaggcaa agtttattat caacaacgct tgggcaacta ccaaatgcag 540
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aaagtcctga ccgggcacga tgccttttcc tatatgggca aacgttacca tatcgaattc 660
atcgccccac aaggtgtgag cagcgaagcc gagccttcag ccaaacaagt cgccgccatc 720
atccgacaaa tcaaacgcga aggcatcaaa gccgtattta ccgaaaatat caaagacacc 780
cgcatggttg accgcatcgc caaagaaacc ggtgtcaacg tcagcggcaa actgtattcc 840
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gccttaacca acgcgatgaa gcaataa 927
<212> Type : DNA
<211> Length : 927
SequenceName : SEQ ID 634
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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actgtaggag cggaggattt gagtactaag attgctaagc aggattctat tatctcaaat 120
ctgactacag agcaaaaagc tgcacagaat caagtttcag cgttacaggc tcaagtaagt 180
tcactacaat ctgaacaaga taaactgacc gcaagaaata cagaacttga ggcactttca 240
aagcgatttg agcaagaaat taaggctcta acaagtcaaa ttgttgctcg taatgaaaaa 300
ttaaaaaatc aagctcgtag tgcttataaa aacaatgaaa cttctggtta cattaatgca 360
cttttgaatt ctaaatcaat ttctgatgtt gtaaaccgtt tagtagcaat taatagagct 420
gtctctgcta acgctaaatt gttagaacaa caaaaagctg ataaagtttc ccttgaagaa 480
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gaaaaccaaa atacattacg tactcaacaa gctaatttgg aagctgcaac tgcaaattta 600
gctctccaat tagcatctgc tactgaagat aaagctaatt tggtagctca aaaagaagct 660
gcagaaaaag ctgctgctga agccttagca caagaacagg ctgctaaagt taaggcacaa 720
gaacaggctg cacaacaagc agcatctgtt gaagcagcaa aatctgctat tactccagca 780
ccacaagcta ctccggcagc gcaaagtagt aatgctattg aaccagctgc actcacggct 840
ccggcagctc cttctgcaag accacaaaca tcatatgatt cttctaatac ttatccagtt 900
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gttcaaagtg cctcaagtat tcgtgtgatg gagtctaact acagtggtag acagtacatt 1140
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<212> Type : DNA
<211> Length : 1197
SequenceName : SEQ ID 635
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
gtgattacaa ttaaaaatcc aaaaatcctt aagtggctaa agtatgtatt aagtgcaatt 60
cttagcctta ttatccttgt tattattatt ggtggtcttt tgtttacctt ctacattagc 120
agtgctccga aactgtcaga agcccagtta aaatcaacaa actctagctt ggtttatgac 180
ggtaataaca atctgattgc tgatttgggt tctgaaaagc gtgaaaatgt aacagctgat 240
agtatcccta ttaatctagt taatgctatt acctcaattg aagataaacg tttctttaac 300
catcgtggag tagatcttta tcgtattttt ggtgctgcct ttcataatct aacgagtcag 360
accactcaag gggggtcaac gcttgatcag caactcatta aactagccta tttttctact 420
aatgaatctg atcaaacctt aaaacgtaag gctcaagaag tttggcttgc tcttcaaatg 480
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ttatcttatg cccagctagc cctattggct ggaatccctc aagctcctag tcaatatgat 660
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caagttattg aagaagtcaa aaaggaaacg aataaagata tttttaccgc tggtttaaaa 900
gtttatacca atattatccc cgatgcgcag cagactcttt ataatattta tcattctggt 960
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aaaccaaggt atgtcaataa agtggaattt agtgatggta caagtaaaac atttgatgaa 1560
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gaagactgga ccatgccaaa tggtctttat cgcagtggtg gattcctcta cttaagcgga 1980
acctatgcga gcaacaccga ctatactaat tcggtttaca acaatcttta cagcaataac 2040

acaacaacag cttctagcca aacgacttca gatgatacta gtagtagcaa tgatacaagt 2100
aattcaacca atacagacaa caatggcagc catccatcta ccgatgataa aaagacaact 2160
cattaa 2166
<212> Type : DNA
<211> Length : 2166
SequenceName : SEQ ID 636
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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gtcctagttg ataatgtttt tacttatact gtaaaatacg gtgacacttt aagcacaatt 180
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acaccatctg atgttccaac gacaccatta gcatctgcaa agccagatag ttttgtgaca 480
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gactttatgg taccggttag ctctacgctt ggtgatcaag ttgctcaata tgccattgac 1020
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gcaagtattt acggaccagc ctatacatgg aaccccatgc cagatcgcgg cagtattaca 1140
gaaaaccatt atgatcatgt tcatgtctcc tttaatgctt aa 1182
<212> Type : DNA
<211> Length : 1182
SequenceName : SEQ ID 637
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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actcaggcaa aacaagtctt agcagagggt aaagtgaagg tggtgacaac tttctaccct 120
gtttatgaat ttacaaaagg ggttattggt aatgatggcg atgtttccat gcttatgaaa 180
gcaggaacgg aacctcatga ttttgagcct tctacaaaag acattaaaaa aatccaagat 240
gcagatgcat ttgtttatat ggatgacaat atggaaactt gggtttctga tgtgaaaaaa 300
tcattgacat ctaaaaaagt gaccatcgtc aagggaactg gtaacatgct cttggtagca 360
ggagctggac atgaccatca ccatgaggat gctgacaaaa agcatgagca taataaacat 420
agcgaagaag gacacaacca tgcttttgac ccacacgtgt ggttgtcacc ataccgtagc 480
attacggtcg ttgaaaatat tcgcgacagt ctttcaaaag cttacccaga aaaagcagag 540
aacttcaaag ccaatgccgc tacttatatt gaaaaattaa aagagcttga caaagactat 600
acggcagcac tttcagatgc taagcaaaag agctttgtga cacaacacgc agcttttggt 660
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gaaccatcag caaaacgtat tgctactttg tcaaaatacg ttaaaaaata tggcatcaaa 780
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gtttacccct atttacaaga tggtacttta gaccaagttt gggactataa ggctaaaaaa 1140
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gacgtggaac aaatcaaaat caatggtaag aaaaagacca tgacctttgt tcgtaatggt 1260
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tcagacttat ctggtcgtga aattgcccaa gaaatcaatg ctcattaa 1548

<212> Type : DNA
<211> Length : 1548
SequenceName : SEQ ID 638
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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gtacctacta tgccatctac acttatttcg caacaggaaa atcttgttca tgcagctgtt 120
ttaggcgata actatccgag taagtggaaa aaaggcaatg gaatcgattc gtggaacatg 180
tatatccgcc aatgcacttc ttttgcagct tttcgtttaa gctctgctaa tggttttcag 240
ttacctaaag gctacggtaa tgcctgcacg tggggacata tcgcgaaaaa tcagggttat 300
cctgtgaata agacaccaag catgggggct atcgcttggt ttgataaaaa cgcttatcag 360
tcaaatgctg cttacgatca tgtagcatgg gtagctgata tccgtggaga cactgtcact 420
atcgaagagt ataattacaa cgctggacaa ggccctgaaa gataccataa gcgtcaaatt 480
ccaaaatctc aggtaagtgg ttatatccat tttaaagact tatcatctca gacaagtcat 540
tcctacccaa gacaactaaa acacatttct caagcttcat ttgacccctc tggaacttat 600
cactttacaa ccagattacc agtcaaagga caaaccagta tcgatagccc tgatcttgct 660
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cagtctgtgg ttcaaaatga caatacaaaa ccttccatta aggtcggtga tactgttacc 840
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gccggaggag acccaactcc actaaactgg attgatccca caccattaga tgaaacagat 960
aaccaaggaa aagttttagg aaatcaaatt ctccgtgtgg gtgaatattt taccgtcact 1020
ggtagttata aagtattaaa aattgatcaa ccaagtaatg gtatttatgt tcaaatcgga 1080
tctcgtggaa catgggtaaa tgctgataaa gctaacaaat tatag 1125

<212> Type : DNA
<211> Length : 1125
SequenceName : SEQ ID 639
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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cctggaggct gctgttgctg ctgtactact tgttgcttct caattgctac tggaagtggt 120
aattctcaag gtggtagcgg aagttatacg ccaggtaaat aa 162

<212> Type : DNA
<211> Length : 162
SequenceName : SEQ ID 640
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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acattacaat cggcaatccg ttcaatcgaa ggcttggaaa agcgttcaac cggtttttca 120
tcggtgtctc aaaaagctag ttccatgttt aaatccatgt taggagcgaa tttagctgga 180
caagctatct cggcaatgac aaggacagtg tcatcaggcc ttggctctat gcttggcgag 240
atgaatagtt cagcgaaagc gtggaaaact tttgacgcta atttagcgga cattgggttt 300
ggaaaaaaac aaattttggc agttaaaacg gcgatgcaag actatgcaac taaaacaatc 360
tactcggcat cagatatggc tagcacgtat gcacagttag cagcagttgg cgtgaaagat 420
accggaaagc tcgtaaaagc ttttggcggt ttagctgcat ctgctgaaaa tccgaagcag 480
gctatgaaat caattagtca gcaaatgaca caagctgttg gaagaccaac agttgcatgg 540
caagacttta ggataatgtt ggaacagacg cctgcaggga tggctaaagt cgctaaatct 600
atgggtaaaa atcttgatga actcgtcgcc gatatccagg cgggtagggt taaaaccagc 660
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gagttcaaaa ctgttgacca agccatcgac ggtatgcgag aaggcttatc caacaaattg 780
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<212> Type : DNA
<211> Length : 1488
SequenceName : SEQ ID 641
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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ccaatgtatg cgatgacaaa agaagtatct ggagacctaa atgatgtgag gatgatccaa 180
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aatttaaaaa aatcaaaggt tgatgtgttt gaagcgtcaa aacctttgac actagataga 360
gtcaaagggc tagaagatat ggaagtcaca caaggcattg accctgcgac actttatgac 420
ccacatacct ggacggatcc cgttttagct ggtgaagaag ctgttaatat cgctaaagag 480
ctaggacgtt tggatcctaa acacaaagac agttacacta aaaatgctaa ggctttcaaa 540
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caagactttg tcaaagaata caacgtcaag actatttttg cagaagacaa tgtcaatccc 780
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ctctatcaac agttgaagta a 921

<212> Type : DNA
<211> Length : 921
SequenceName : SEQ ID 642
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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agtgaaccaa caatcacgaa tcacactcaa caacaagcgc aacatctcac caatacagag 180
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gatgcagcac caatggctaa tacaggtcct gatgcgactc aaaaaagcgc ttctttaccg 360
ccagtcaata cagatgttca cgattgggta aaaaccaaag gagcttggga caagggatac 420
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<212> Type : DNA
<211> Length : 4944
SequenceName : SEQ ID 643
SequenceDescription :

Sequence

<213> OrganismName : Treponema pallidum subsp. pallidum str. Nichols
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 1392
SequenceName : SEQ ID 644
SequenceDescription :

Sequence

<213> OrganismName : Treponema pallidum subsp. pallidum str. Nichols
<400> PreSequenceString :

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atcagctatg gcaagggggt aggcagtcat ggccaggccc ctggtgcagt tatgggcacc 180
ggtccctaca atctgaagca cgggtttcgt actaccaaca cggtgggagt atcctttccc 240
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<212> Type : DNA
<211> Length : 2277
SequenceName : SEQ ID 645
SequenceDescription :

Sequence

<213> OrganismName : Treponema pallidum subsp. pallidum str. Nichols
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 1797
SequenceName : SEQ ID 646
SequenceDescription :

Sequence

<213> OrganismName : Treponema pallidum subsp. pallidum str. Nichols
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 1797
SequenceName : SEQ ID 647
SequenceDescription :

Sequence

<213> OrganismName : SARS coronavirus Frankfurt 1
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 3768
SequenceName : SEQ ID 648
SequenceDescription :

Sequence

<213> OrganismName : SARS coronavirus HSR 1
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 3768
SequenceName : SEQ ID 649
SequenceDescription :

Sequence

<213> OrganismName : SARS coronavirus ZJ01
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<212> Type : DNA
<211> Length : 3768
SequenceName : SEQ ID 650
SequenceDescription :

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<213> OrganismName : SARS coronavirus TW1
<400> PreSequenceString :

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<212> Type : DNA
<211> Length : 3768
SequenceName : SEQ ID 651
SequenceDescription :

Sequence

<213> OrganismName : SARS coronavirus CUHK-Su10
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<212> Type : DNA
<211> Length : 3768
SequenceName : SEQ ID 652
SequenceDescription :

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<213> OrganismName : SARS coronavirus Urbani
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<212> Type : DNA
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SequenceDescription :

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<213> OrganismName : SARS coronavirus
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<212> Type : DNA
<211> Length : 3768
SequenceName : SEQ ID 654
SequenceDescription :

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<213> OrganismName : SARS coronavirus TOR2
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<212> Type : DNA
<211> Length : 3768
SequenceName : SEQ ID 655
SequenceDescription :

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<213> OrganismName : SARS coronavirus GD01
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<212> Type : DNA
<211> Length : 3768
SequenceName : SEQ ID 656
SequenceDescription :

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<213> OrganismName : SARS coronavirus CUHK-W1
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<212> Type : DNA
<211> Length : 3768
SequenceName : SEQ ID 657
SequenceDescription :

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<213> OrganismName : SARS coronavirus BJ01
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<212> Type : DNA
<211> Length : 3768
SequenceName : SEQ ID 658
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
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<212> Type : DNA
<211> Length : 4767
SequenceName : SEQ ID 659
SequenceDescription :

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<213> OrganismName : Escherichia coli O157:H7
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<211> Length : 15876
SequenceName : SEQ ID 660
SequenceDescription :

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<213> OrganismName : Escherichia coli O157:H7
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<212> Type : DNA
<211> Length : 4038
SequenceName : SEQ ID 661
SequenceDescription :

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<213> OrganismName : Escherichia coli O157:H7
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<212> Type : DNA
<211> Length : 4386
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SequenceDescription :

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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :

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agcggtgtga tgtcgggaaa tgtcaccact gcaggtgatg tgaacgttat gtctgggggg 3960
acactgcgtg tcgctaaaac cacaatcggc gaatcggcgg caacctggag aatggcggca 4020
cggttcaaat ga 4032
<212> Type : DNA
<211> Length : 4032
SequenceName : SEQ ID 663
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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cgttcgccct caattcaact gataaaattt ggcgctattg gtttgaatgc aattctcttt 120
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gatggtgaca gaattactgg agataccgcc gatccatcag gaaacctcta tggtgtaatg 240
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aatggcgtta agccctgggc ctga 1644
<212> Type : DNA
<211> Length : 1644
SequenceName : SEQ ID 664
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 705
SequenceName : SEQ ID 665
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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caggctgctg acgtaacagc tcaggctgta gcgacctggt cagcaacagc caaaaaagac 120
accaccagta agctggttgt gacgccactc ggtagcctgg cgttccagta tgccgaaggc 180
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<212> Type : DNA
<211> Length : 588
SequenceName : SEQ ID 666
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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accgggcagg ggcagaaatc tgcaggtgat accagtttta cgctggcctg gaaaccggga 120
gaggaaggcc agaaagggct tataggctgg tttgaaagcg gcgatgtccg ggcctataaa 180
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gccgtgacgg cgaaagaagt gatcacccgc acggtgaaag tcactaacgt gggtaaacct 300
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gcaacagaca agacgttcag agcggtttcc gccgatccgt cgaaagccac cattagtgtg 480
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agcggaaatg gtcagttcgc cgcagtggct gaagtcaccg ttactgaagc gggcgctgca 600
gggtaa 606
<212> Type : DNA
<211> Length : 606
SequenceName : SEQ ID 667
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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tccggtacgg tggcaaaagg gaaaacaacc accctgacgg tttcttttga gccggaaagt 420
gcaacagaca agacgttcag agcggtttcc gccgatccgt cgaaagccac cattagtgtg 480
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<212> Type : DNA
<211> Length : 606
SequenceName : SEQ ID 668
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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gggatagttt ctactgcaac cgcaacttct tcagaaacaa aaatcagcaa cgaagagacg 120
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gttattgacc aacaaacatt gcagaactcc accaatgcct ccatagccga taatttgcag 240
gacatccccg gagtagagat aacagacaac tccttggcag gccgtaaaca aatccgcatt 300

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<212> Type : DNA
<211> Length : 2148
SequenceName : SEQ ID 669
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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gtggggcaac gtgaacctgc accggtagaa gaagtgaaac cagcgccgga acaaccagcc 120
gagccacaac agcctgtccc cacagtgccc tcggtgccga cgatcccgca gcagccaggc 180
ccaattgagc acgaagatca aactgcaccg cctgcgccgc atattcgcca ttatgactgg 240
aatggcgcaa tgcagccgat ggtcagtaag atgcttgggg ctgacggggt gactgcgggt 300
agcgtcctgc tggttgatag cgttaacaac cgtactaacg gttcgctgaa tgccgcagaa 360
gcgaccgaaa cgctgcgaaa tgcgctggct aataacggga aatttaccct ggtttccgcc 420
cagcagctgt cgatggctaa gcaacagtta ggtttgtcgc cgcaggatag tttaggcacc 480
cgtagtaaag ccataggcat tgcccgcaat gtcggcgctc attacgtgct gtactccagc 540
gcctctggca acgttaacgc tccgacccta caaatgcagc tgatgctggt gcagacgggc 600
gaaattatct ggtcaggtaa aggtgccgtt tcgcagcaat aa 642

<212> Type : DNA
<211> Length : 642
SequenceName : SEQ ID 670
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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gcagccgaag tttataataa agacggcaac aaattagatc tgtatggcaa agttgatggc 120
ctgcattatt tttctgataa ttcagcgaaa gatggcgacc agagctatgc gcgtctgggt 180
tttaaaggcg aaacccaaat taacgatcaa cttactggct acggtcaatg ggaatacaat 240
attcaggcaa acaacactga atcttcaaaa aaccagtcat ggacccgtct ggcatttgcc 300
ggactgaaat tttcagatta cggttctttc gattacggac gtaattatgg gctggaccga 360
tatgctgcct ga 372

<212> Type : DNA
<211> Length : 372
SequenceName : SEQ ID 671
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli 0157:H7
<400> PreSequenceString :
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aaggtgaagg atctgacgcc gggcgagatg acggcagaac cctacgatga taactacctg 180
gatgatgaag acgcggactg gaccgcgacc gggcaggggc agaagtctgc aggagatacc 240
agttttacgc tggcctggaa accgggagaa gaaggtcaga aagggcttat aggctggttt 300
gaaagcgggg atgtgcgggc ctataaaatc cgtttcccaa atggcacggt ggatgtgttc 360
cgtggctggg tcagcagtat cggtaaggcc gtgacggcga aagaagtgat cacccgcacg 420
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gccactgcaa ttaaggtgac accgacatcc ggtacggtgg caaaagggaa aacaaccacc 540
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gatccgtcga aagccaccat tagtgtgaaa gatatgacaa ttacggtaaa cggcgtggcg 660
acaggtaagg tgcagatccc tgtggtgagc ggaaatggtc agttcgccgc agtggctgaa 720
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<212> Type : DNA
<211> Length : 753
SequenceName : SEQ ID 672
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli 0157:H7
<400> PreSequenceString :
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gatgatgaag acgcggactg gaccgcgacc gggcaggggc agaagtctgc aggagatacc 240
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<212> Type : DNA
<211> Length : 753
SequenceName : SEQ ID 673
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli 0157:H7
<400> PreSequenceString :
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<212> Type : DNA

<211> Length : 768
SequenceName : SEQ ID 674
SequenceDescription :

Sequence

<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
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tatacgttga ataatggtaa atggcgcatt gttggggaat taccaatgaa tattggttat 1020
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aaggctttaa ctagcgtcaa agcaataagc tatgacggta aaaaattaac catcgaataa 1140

<212> Type : DNA
<211> Length : 1140
SequenceName : SEQ ID 675
SequenceDescription :

Sequence

<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
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gcgtatgttt cttggttaaa aacaaaaggg gatgatttaa aatcttcaaa agggtatttt 120
ttggcagggc gtgggttaag cggtttagta attggctgct caatggtgct gacatcgctt 180
tcaactgaac aacttatcgg tgtcaatgcg gtgtcctata aaggtaattt ttccgtgatt 240
gcttggacag ttccaacggt tattccgctt tgtttcttgg ctctttatat aattggctgg 300
ctataa 306

<212> Type : DNA
<211> Length : 306
SequenceName : SEQ ID 676
SequenceDescription :

Sequence

<213> OrganismName : [Helicobacter pylori, strain J99
<400> PreSequenceString :
atgaaaaatc aacacaaaaa tcccctaaca aaagctttaa tgaaaactta tccatataac 60
catttttat ttttctgctt tattctagga gcgtttttat taggtttgct cagtccagct 120
tatgctttaa gtattatcac cactaaagaa attgacgcta atttgcttaa tggagcgata 180
gaaagcaggg tggtgttagg caagagggtg tttaaagtag aagctcatgg gttttatttt 240
agaaacaatg cgactaacag catagatata gaaatcacca gtcttttaag agacaatcaa 300
tcgtttcctt tgactagcag tgctaaaacc agtttaaaaa tacctcctaa cgccaagatt 360
aaaaaatcca ctatccttgt tttgaaaggc gagaacgctg aagaagtggc taagatttta 420
ggcgttagca aagaagaata ccaaaagcta gaaaacatcg ctcaaaccaa agcggctaat 480
gaccctatgt atgctaacac gccttttagt aatggttctg atagttcctt ttacgataac 540
aatcctaata gccctagcaa taacgctatc aatggcaaag atggcgcaaa tgggagtaac 600
ggctatgggg caaatggcaa tgatggggta aatgggatca gtgggagtaa tggtgcaaat 660
gggagtcatt caaataataa tgcaataggc agtggtattg atacagatgg cgtgttaggg 720
gtggatgggg tgaatggctc tagttcttca agtggcggct ctgtaggggg ttatgagaat 780
aatttcacta atcatggctc tactaacaat aacacaggag ggtatgacaa ttttaataat 840
ggcagctcaa gtggtgggag tttagggaat gggggggcttt tccctattcc ttttggtaat 900

ggagacacaa acaattccaa taattccact aacaccacta gcccaactaa tggcagtagt 960
tctaataacg ccactaatcc tagttcgcaa gaaaacaatt actccagcca gtattgtaaa 1020
gtgccagagt taagccccaa caacacgatg aaactagatg ttatcgctaa agatggctct 1080
tgtatttcta tgaacgcttt aagagatgac actaaatgcg cttatagata cgatttgaa 1140
gccggtaaag ccatcaagca aacgcaatac tactatgtag atagggaaaa taaaacgcaa 1200
aatatcggtg gttgtgtgga tttacaaggc gctcaatacg ccatgcaact ttacaaagat 1260
gacagcaaat gcgccttaca aaccacgagc gataaaggtt atggtatggg gaaaacgcaa 1320
acctttcaaa ctgaaatcgt gtttcgtggg atggacaatt taatccatgt cgctgtgcct 1380
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ggtcaatggg aatacaatga cgctaaatta gaagccaaaa gacctacaat gctaaaaagc 1620
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aaaagcggtg cggttgttag cccttatgtg atgggcgtgc ctagttctaa agtcttaagc 1740
gatattacta caagccatta ttttaggata gaaaggaaaa attatggtga gagagaacaa 1800
tgccaaaaac tttatggagt caatcgttgc caaccgcaat attccatact gatcctagta 1860
tcaccgattg gagcgccact tacaaaacca ctaccaccca aaccactcaa ccttatttac 1920
gcccagccca agataatgaa aaacacccca caacctataa tcttatcacc actcaaacca 1980
ccatcaacag gactcaaagc gttttga 2007

<212> Type : DNA
<211> Length : 2007
SequenceName : SEQ ID 677
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
atgcctgtta taagagtttt agtaatgctt gcaacaatga tgatgaaatt agtaaaaacg 60
gcaaaagaaa agaaagtttt taagaatgtg ggaatatcta taatggggat tgcttttttgg 120
gaagcgataa aagactcgat aaaaaaacaa attaaaaaaa gcgattggat atgcgggaat 180
gttaagactg cggatgatta tttaaaaacg catcctaact catggtttaa ttcagcaata 240
ggtgtaacag cgataacagc catgcttatg aatgtgtgtt ttgctgatga ccaatccaaa 300
aaagaagtgg ctcaagctca aaaggaagct gaaaacgcta gggatagagc gaacaagagt 360
gggatagaac tggaacaaga agagcaaaag acagaacaag aaaaacaaaa gacagaacaa 420
gaaaaacaaa agacagaaca agaaaaacaa aagacagaac aagaaaaaca aaagacagaa 480
caagaaaaac aaaagacaag caatatagag actaacaatc aaataaaagt agaacaagaa 540
caacaaaaga cagaacagga aaaacaaaag acaaacaata cgcaaaaaga tttggttaac 600
aaagcagaac aaaattgcca agaaaatcat aatcaattct ttattaaaaa attaggaatt 660
aaggctggca ttgctataga aatagaagct gaatgcaaaa cccctaaacc cacaaaaacc 720
aatcaaaccc ctatccagcc aaaacacctc ccaaactcca aacaacccca ttctcaaaga 780
ggatcaaaag cgcaagagct tatcgcttat ttgcaaaaag agctagaatc tctgccctat 840
tcacaaaaag ctatcgctaa acaagtggat ttttataggc caagttctat cgcttattta 900
gaactagatc ctagagattt taacgctaca gaagaatggc aaaaagaaaa tttaaaaata 960
cgctctaaag ctcaagctaa aatgcttgaa atgaggagtt taaaaccaga cccacaagcc 1020
caccttcaa cctctcaaag ccttttgctc gttcaaaaaa tatttgctga tgttagtaaa 1080
gaaataaaag tagttgctaa taccgagaaa aaagtagaaa aagcgggtta tggttatagt 1140
aaaaggatgt ag 1152

<212> Type : DNA
<211> Length : 1152
SequenceName : SEQ ID 678
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
atgaactacc ctaatctacc taacagcgct ttagagataa gcgaacagcc agaagtgaaa 60
gaaatcacta acgagctttt aaagcaatta caaaacgctt taaggagcaa cgcgcatttt 120
agcgagcaag tggaattaag ccttaaatgc atcgttagga ttttagaagt gcttttgagt 180
ttggattttt ttaagaatgc gaatgagatt gatagcagtt taagaaattc cattgagtgg 240
ctgactaacg ccggcgagag cttgaaatta aaaatgaaag aatacgagcg ctttttagc 300
gagtttaata cgagcatgca tgccaacgag caggaagtaa ccaatacctt aaacgctaac 360
gccgagaaca ttaaaagcga aattaaaaag ctagaaaatc aattgataga aaccacgaca 420
agacttttaa cgagctatca aatcttttta aaccaagcca gagataacgc taacaaccaa 480
atcacaaaaa acaaaaccca aagccttgaa gcgattacac aagctaaaaa caacgctaat 540
aatgaaataa gcaacaatca aacgcaagcg ataactaata tcaccgaagc gaaaacgaac 600

gctaataatg aaataagcaa caatcaaacg caagcgataa ctaacattaa cgaagccaaa 660
gaaagcgcta caacgcaaat aaacgccaat aagcaagaag caataaataa catcacgcaa 720
gaaaaaaccc aagccacaag cgagatcacc gaagcgaaaa agaccgatca ttatcaaaac 780
attgattttt ttgagtttga ataa 804

<212> Type : DNA
<211> Length : 804
SequenceName : SEQ ID 679
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
gtgaaatttt tttcaaagga tttgtttaaa aaagtaactc ctttatttttaagcgtttat 60
tttttaagcc ccacccttac gcaagccaaa agccgttttt atgtggcttc tcaataccag 120
gtggggaaaa tgatcatgaa aaaatacaac gatctcaaac gcacgattga aggggcgagc 180
ttttctttag gctgggagat taaccccact aattactggt tttattcgcg ctattacttt 240
tttatggatt acgggaatgt cattctcaat aaaagaacgg gcgctcaagc gaacatgttc 300
acttacggct ttggagggga tttgatcatg gaatacaata aaaacccttt gtatgtattt 360
tctcttttt atggcatgca agttgctgaa aacacatgga cgatttccaa acacagcgcg 420
aatttcatca ttgacgactg gcgcagcatt caagggtttt cgctcaaaac ttcaaatttc 480
aggatgttgg gtttagtggg gtttaaattc caaaccgtgc tattccacca tgacgctagt 540
attgaagtgg ggatcaaatg gccttttgct tttgaatacg actcaccctt tgtaaggctt 600
ttttctgtct ttatttcgca cactttctac ctttaa 636

<212> Type : DNA
<211> Length : 636
SequenceName : SEQ ID 680
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
atgaaaaaat ttaccctatc gctatttttg tgttgcacct tacttaacgc tgaagaggat 60
atttttagga acaacacaaa tgaaactgat cttacaaatt cttttgaaca tggcaaagaa 120
aacaacaatc ttatcccagc aaaatccgat agtttagaaa gtttcaaaga acaagaaaac 180
aaagaaaaag ccaaacagct tatggattta aaggccttac agagcgtgta tttttctaaa 240
aatagaaaat tgcaagacaa taatttcaat gtcttgtatg tggcaggcaa caccaacaaa 300
atccgcttac gctatgcgat gactaccacc tttatttttg ataatgatcc tattatctat 360
gtgagtttag gagatcctag cgattttgaa ctcacttacc ccactaatga tcattacgat 420
ttgtctaaca tgctagtgat taagccgtta cttatagggg tggatacgaa cctaaccgta 480
gtcggagcga gcggcacaat ttatacctta ttatttgttt ag 522

<212> Type : DNA
<211> Length : 522
SequenceName : SEQ ID 681
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
gtgttggatt atgtgccctg gattgggaat gggtacaggt atgggaataa ccaccggggg 60
agcaacagta gtacgagtgg ggtaacgacc cagggacaat cccaaaatgc atccagtaac 120
gaacccgcac cgacgttttc gaatgtcggc gttggtctca aagccaatgt caacggcacc 180
ttaagtggtt cgcgaactac gcctaatcag caaggcactc cctggttaac cctcgaccaa 240
gccaacctcc agctctgaac gggcgcgggg tgaaggaatg ataagaacgg acaaagtgac 300
gaaaactaca ccaatttcgc gagtgctaag ggcagtacga accagcaggg ttcaacaacg 360
ggtggatcag cgggcaaccc cgactcgtta aagcaggata aggctgataa aagtggtgat 420
tcggtaacgg ttgcagaagc cacatcgggc gacaacttga cgaattacac caacctcccc 480
ccaacatcac ccccacatcc gactgaccga acgcgctgtc attcaccaac aagaacaacg 540
cccagcgggt gcagctgttc ctgcgcggcc tgttgggcag catcccggtg ttggtcaata 600
agagtgggca agatgataac agtaagttta attccaccga ccaaaaatgg tcttacaccg 660
aattaa 666

<212> Type : DNA
<211> Length : 666
SequenceName : SEQ ID 682
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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acaagtggtt cgcgttcctt tctcccgacg ttttcgaatg tcggcgttgg cctcaaagcg 120
aatgtccagg gcaccctcgg gggcagacag acgacgacta cggggaacaa tattcccaaa 180
tgagccaccc tcgaccaagc caacctccag ctctgaacgg gggcggggtg aaggaatgat 240
aagactacaa gtggttcaac cggcaatgcc aatgacacca agttcacgag tgctacgggc 300
agtgggagtg ggcagggcag ttcttcaggt acaaatactt ccgcggggaa tcctgatggg 360
cttcaggctg ataaagttga tcaaaacggt caggtgaaaa caagcgttca agaagccact 420
tcaggggaca acttgacgaa ttacaccaac ctccccccg ccaacctcac ccccaccgct 480
gattgaccga acgcgctgtc attcaccaac aagaacaacg cgcagcgcgc ccagctgttc 540
ctgcgcggcc tgttgggcag catcccggtg ttggttaata agtccggcca agatgataac 600
agtaagttta aggcggagga ccaaaaatgg tcctacaccg acttacagtc ggaccaaacc 660
aaactgaacc tccccgctta cggcgaggtg aatgggttgt tgaatccggc gttggtggaa 720
acctattttg ggaacacgcg agcgagtggt tcggggtcca acacgaccag ttcacccggt 780
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gcagctacaa gtagtaccac caccaccgca acaggggcta ccttaccgga gcacccgaat 1200
gccctcgcgt accaaattag ctataccgac aaggattcgt acaaggcttc cactcaaggt 1260
tcgggtcaaa ccaattccca aaacaattcg ccctacctcc attttattaa acctaagaaa 1320
gtcgaaagca cgacccaact cgaccagggc ttaaaaaacc tgttggaccc caaccaggtt 1380
cgcaccaagc tgcgccaaag ctttggtaca gaccattcca cccagcccca gccccaatcg 1440
ctcaaaacaa cgacaccggt atttgggagg agtagtggta acctcagtag tgtgtttagt 1500
ggtgggggtg ctggaggggg ttcttcaggc tcaggtcaat ctggcgtgga tctctccccc 1560
gttgaacggg tgagtggtca ctaa 1584
<212> Type : DNA
<211> Length : 1584
SequenceName : SEQ ID 683
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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ttcaacctcg cggggtcggt gctcgaccag gtgttggatt atgtgccctg gattgggaat 120
gggcacaggt atgggaataa ccaccggggc gtggatgata taaccgcgcc taaaaccggc 180
gcggggtcgt ccagcggaac tagtacgaac acaagtggtt cgcgttcctt tctcccgacg 240
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acgacgacta cggggaaaga tattcccaaa tgacccaccc tcgacccagc caacctccag 360
ctctgaacgg gggcggggtg aaggaatgat aaggcttcaa acaaacaaag tgacgaaaac 420
cacaccacct ttaaaagcgc tacgggcagt ggccagcagg gtggttctac aacgggtggt 480
tcagcgggca atcccgactc gttaaagcag gataagatta gtaaatcagg tcagaacttа 540
accacgcagg acggcgcgcc ccagtctaat tcgacgacgg aatccgcgtc gaattatgat 600
cacctccccc ccaacctcac ccccacatcc gattgaccga acgcgctgtc attcaccaac 660
aagaacaacg cgcagcgcgc ccagctcttc ctccgcggct tgttgggcag catcccggtg 720
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caagctcagg cggccgcgca agcagctacc accgccgccg caacagggga cgccttaccg 1320
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ccaaccaggt tcgcaccaag ctgcgccaaa gctttggtac agaccattcc acccaagcca 1560

aaccccaatc cctcaaaaca accacaccgg tgtttgggac gaatagtggt aacattggca 1620
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ccgttgaacg ggtgagtggg tggcttgtgg ggcaattacc cagtgggggt gggggaata 1740
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caaaccacgt atgatcccac ccgaaccgaa gcggctttga ccaccgccac caccttgtg 2160
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<212> Type : DNA
<211> Length : 2214
SequenceName : SEQ ID 684
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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agcaacagta gtacgagtgg ggtaacaacc cagggacaac aatcgcaaaa tgcatccgga 120
accgaacccg catccacttt ttcgaatgtc ggcgttggcc tcaaagcgaa tgtccagggc 180
accctgggtg gcagtcagac gacgactacg gggaaagata ttcctaaatg acccaccctc 240
gaccaagcca acctccagct ctgaacgggg gcggggtggc ggaatgataa ggcttcaagt 300
ggacaaagtg acgaaaacca caccaagttc acgagcgcta cgggcagtgg gcagcagggc 360
agttcttcag gtacaactaa ttccgcgggc aatcccgact cgttaaagca ggataaggtt 420
gataaaagtg gtgattcggt aacggttgca gaaaccactt caggggacaa cttgacgaat 480
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accaacaaga acaacgcgca gcgcgcccag ctcttcctcc gcgccctgtt gggcagcatc 600
ccggtgttgg tgaataagag tggccaagat gattccaaca agttccaagc caccgaccaa 660
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caccaatgct ttggcctttc aggtgagtta taccgaccag gattcgtaca aggcttccac 1320
tcaaagctcc ggccaaaacc aaaacacctc cccctacctg cacttggtgc aggggaaaaa 1380
agtaggttcc tctgataa 1398

<212> Type : DNA
<211> Length : 1398
SequenceName : SEQ ID 685
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
ttgttgggca gcatcccggt gttggtgaat cgaagtgggt ccgattccaa caaattccaa 60
gccaccgacc aaaaatggtc ctacaccgac ttacagtcgg accaaaccaa actgaacctc 120
tccgcttacg gtgaggtgaa tgggttgttg aatccggctt tggtagaaac ctattttggg 180
acgacgcgta cgtctagcac tgcgaaccaa aacagtacaa ccgtccccgg tatcggtttt 240
aaaattcccg aacaaaataa tgattccaaa gccaccctga tcaccccccgg gttggcttga 300
acgccccagg acgtcggtaa cctcgttgtc agtggcacca cggtgagctt ccagctcggc 360
gggtggctgg tcaccttcac ggactttgtc aaaccccgcg cgggttacct cgggctccag 420
ttaagtggcc tgaatgccag tgacagcgac caaagggagt taatttgggc cccccggccc 480
tgagcggcct ttcgtggcag ttgggtcaac cggttgggcc gcgtggagag tgtgtgggat 540
ttgaaggggg tgtgggcgga tcaagctcag ttggccgcgc aagcagctac aagtagtacc 600
accaccaccg caacaggggc taccttaccg gagcacccga atgctttggc gtaccaaatt 660
agctataccg acaaggattc gtacaaggct tccactcaag gttcgggtca aaccaattcc 720
caaaacaatt cgctctacct ccatttgatt aaacctaaga aagtcgaaag cacgacccaa 780

ctcgaccagg gcttaaaaaa cctgttggac cccaaccagg ttcgcaccaa gctgcgccaa 840
agctttggta cagaccattc cacccagccc cagccccaat cgctcaaaac aacgacaccg 900
gtgtttggag ccatgagtgg taacctcggc agtgtgctta gtggtggggg tgctggagga 960
gcaggcagca ccaattcggt ggacctctcc cccgttgaac gggtgagtgg gtcactaacc 1020
attaatagga atttttctta ttaa 1044

<212> Type : DNA
<211> Length : 1044
SequenceName : SEQ ID 686
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
atgggccagc agggacaatc aggtacctcc gcggggaatc cagactcgtt aaagcaggat 60
aagattagta agagtgggga tagtttaacc acgcaggacg gcaatgcgac cggtcaacaa 120
gaggccacta actacaccaa cctcccccccc aacctcaccc ccaccgctga ttgaccgaac 180
gcgctgtcat tcaccaacaa gaacaacgcg catcgcgccc agctcttcct tcgcggcttg 240
ttgggcagca tcccggtgtt ggtgaatcga agtgggtccg attccaacaa attccaagcc 300
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ggtgtggacc tctcccccgt tgaacgggtg agtggtcact aa 1242

<212> Type : DNA
<211> Length : 1242
SequenceName : SEQ ID 687
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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gccaagcggc cctgagcggc atttcgtggc agttgggtca accggttggg acgggtcgag 120
agtgtgtggg atttgaaggg ggtgtgggcg gatcaagctc acagcgcggt gtccgagtcg 180
caagcagcta caagtagtac caccaccacc gcaacagggg acaccttacc ggagcacccg 240
aatgccctcg cgtaccaaat tagctccacc gacaaggatt cgtacaaggc ttccactcaa 300
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gttcgggtga agctgcgcca aagctttggt acagaccatt ccacccaacc ccaaccccaa 480
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gtgagtgggt ggcttgtggg gcagttacca agcacgagtg acggaaacac ctcctccacc 660
aacaacctcg cgcctaatac taatacgggg aatgaggtgg tgggggtggg agatttgtct 720
aagcgagctt ccattgaatc aagtcgtttg tgaatagcat taaaacctta g 771

<212> Type : DNA
<211> Length : 771
SequenceName : SEQ ID 688
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :

gtgcgcgata acactgccaa gggcatcact gccggcagtg gcagtcaaca aaccacgtat 60
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ctcgccgggc gcgccttata cgacctcgac ttttcgaagt taaacccaca aacgccaacg 180
cgtgatgcca actgccagat caccttaac ccctttggcg gctttggttt gagtggcagt 240
gcaccccaac agtgaaacga ggtcaaaaac aaggtccccg tcgaggtggc ccaagacccc 300
accgatcctt atcggtttgc cgttttactc gtgccgcgca gtgtggtgta ctatgagcag 360
ttgcaaaggg gattagcgct ccctaaccaa gggagttcgt caggctccgg tcaacaaaac 420
accaccattg gcgcgtatgg gctgaaggtg aagaacgccg aggcggacac cgcaaagagc 480
aatgaaaaac tccagggcga tgaatccaag tcttccaatg gatcttcaag cacttccacc 540
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aacgctccca ttaagcgggg cgaggagtcg ggtcagtccg tccaactcaa ggcggacgat 720
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accgcgcctt tgagtatttg gctttatata tatttagtaa aggcagtcac ttttaggttg 1260
cttttagcta actctttatt atcaaaaagc aacatatata aaaaaacagc taattaa 1317

<212> Type : DNA
<211> Length : 1317
SequenceName : SEQ ID 689
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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gatcccaccc gaaccgaggc caccttgacc accgccacca cctttgcgtt acgccggtat 120
gacctcgccg ggcgcgcctt atacgacctc gatttttcga agttaaaccc acaaacgccc 180
acgcgcgacc aaaccggtca gatcaccttt aacccctttg gcggctttgg gctgagtggg 240
gctgcacccc aacagtgaaa cgaggtcaag gataaggtcc ccgtcgaggt ggcccaagac 300
ccctccaatc cttatcggtt tgccgtttta ctcgtgccgc gtagcgtggt gtactatgag 360
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agcaatgaaa aactccaggg ctatgaatcc aagtcttcca atggatcttc aagcacttcc 540
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gtcgcggata acgaaaagac cgggtttgat gtggataact ccgaaaacac caagcagggc 1140
tttcaaaagg aagctgactc cgacaagtcg gccccgatcg ccctcccgtt tgaagcgtac 1200
ttcgccaaca ttggcaacct cacctggttc gagcaagcgc ttttggtgtt tgggatttgt 1260
ttgtcttaa 1269

<212> Type : DNA
<211> Length : 1269
SequenceName : SEQ ID 690
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
atgctttggc ctttcaggtg agtgtggtgg aagcgagtgc ttacaagcca aacacgagct 60
ccggccaaac ccaatccact aacagttccc cctacctgca cttggtgaag cctaagaaag 120
ttacccaatc cgacaaagtt agacgacgat cttaaaaacc tgttggaccc caacgaggtt 180
cgcgccagaa tgctcaaatc atttggtaca gaaaatttca cccaacccca accccaaccc 240

caagccctca aaacaacgac accggtattt gggacgagta gtggtaacct cggtagtgtg 300
cttagtggtg gggggtacca cgcagggctc aagcaccacc aatcaactgt cacccgttca 360
acgggtgagt gggtggaccg ctaa 384
<212> Type : DNA
<211> Length : 384
SequenceName : SEQ ID 691
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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gatcccactc gaaccgaagc ggctttgacc gcatcaacca cctttgcgtt acgccggtat 120
gacctcgccg ggcgcgcctt atacgacctc gactttagta ggttaaaccc acagacacca 180
acgcgcgacc aaaccgggca gatcaccttt aacccctttg gcggctttgg tttgagtggg 240
gctgcacccc aacagtgaaa cgaggtcaaa aacaaggtcc ccgtcgaggt ggcccaagac 300
ccctccaatc cttatcggtt tgccgtttta ctcgtgccgc gtagcgtggt gtactatgag 360
cagttgcagc gggggttagc gctccctaac caagggagtt cgtcaggctc cggtcaacaa 420
aacaccacca ttggcgcgta tgggctgaag gtgaagaacg ccgaggcgga caccgcgaag 480
agcaatgaaa aactccaggg cgatgaatcc aagtcttcca atggatcttc aagcacttcc 540
accaccaccc aacgtggggg ttcgtcaggg gacaccaaag tcaaggcgtt gcaggtggcg 600
gtgaaaaaga aatccgggag tcagggcaac tccggtgaac aaggcaccga acaggtggaa 660
cttgaatcta atgatctcgc caacgctccc attaagcggg gcgaggagtc gggtcagtcc 720
gtccaactaa aggcagccga cttcggcacc accccatcca gttcgggatc aggcggcaac 780
tccaaccccg gttcccccac cccctgaagg ccgtggcttg cgaccgagca aattcacaag 840
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cgtaccgcca ttgatcgcgt tgatcacttg gatcccaagg tgatgaccgc gaactatccg 960
cccagttgaa gaacgcccaa gtgaaaccac cacgggttgt gggactgaaa ggccagagat 1020
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ggccaagcgg tcgcggataa tacccaaacc gggtttgata cagatgacac cgataataaa 1140
aaaacaaggc tttcaaaagg aagctgactc cgacaagccg gccccgatcg ccctcccgtt 1200
tgaagcgtac ttcgccaaca ttggcaacct cacctggttc gggcaagcgc ttttggtgtt 1260
tgggatttgt ttgtcttaat taactaa 1287
<212> Type : DNA
<211> Length : 1287
SequenceName : SEQ ID 692
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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cagggcgctg aggccactgg ttcttcaacc acatctggat ctggccaatc cacccaacgt 120
gggggttcgt caggggacac caaagtcaag gcgttgcagg tggcggtgaa aaagaaatcc 180
gggagtcagg gcaactccgg tgaccaaggc accgaacagg tggaacttga atctaatgat 240
ttagccaacg ccccgattaa acggggctcc aatccagcaa gtccaactca aggcagccga 300
cttcggcacc accccatcca gttcggaatc tggtcaatca ggcaccccca ccccctgaag 360
gccgtggctt gcgaccgagc aaattcacaa ggacctcccc aaatgatccg cctcgatcct 420
cattctgtac gatgcgcctt atgcctttaa 450
<212> Type : DNA
<211> Length : 450
SequenceName : SEQ ID 693
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
atgtttggct tgaaggtgaa ggatgcaacc gtggatagtt cgaagcaatc aacggaaagc 60
ttaaagggcg aagaatcgag ttccagttcc accacatctt ccacctccac cacccaacgt 120
gggggttcgt caggggacac caaagtcaag gcgttgcagg tggcggtgaa aaagaaatcg 180
gactcggagg acaatggtca gatcgaactt gaaaccaaca acctcgccaa cgccccgatt 240
aaacggggct ccaataacaa ccagcaagtc caactcaagg cggacgattt tggtacttcc 300
ccttccagtt cggaatctgg tcaatcaggc acccccaccc cctgaacgcc gtggcttgcg 360
accgagcaaa ttcacaagga cctccccaaa tgatccgcct cgatcctgat tctgtacgat 420

gcgccttatg cgcgcaatcg taccgccatt gatcgcgttg atcacttgga tcccaaggtg 480
atgaccgcga actatccgcc cagttgaaga acgcccaagt gaaaccacca cgggttgtgg 540
gactgaaagg cgcgcgatgt cctggtccaa accaccgggt tcttcaaccc gcgccgccac 600
cccgattggt ttgaccaggg ccaagcggtc gcggagaata cccaaaccgg gtttgataca 660
gatgacaccg ataataaaaa gcagggcttt cgcaaacaag gcgaacaatc ccctgccccc 720
atcgccctcc cgtttgaagc gtacttcgcc aacattggca acctcacctg gttcgggcaa 780
gcgcttttgg tgtttgggat ttgtttgtct taa 813

<212> Type : DNA
<211> Length : 813
SequenceName : SEQ ID 694
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
atgggcagtc aaaaccaggg ttctacaaca actacctcag cgggcaatcc cgattcttta 60
gttactgata aagttgatca aaaaggtcag gtgcaaacaa gtggtcaaaa tttaagtgat 120
accaactaca ccaacctctc ccccaacttc acccccacat ccgactgacc gaacgcgctc 180
agcttcacca acaagaacaa cgcgcagcgc gcccagctgt tcctgcacgg cttgttgggc 240
agcatcccgg tgttggttaa taagagtggc gaaaataacg aaaaattcca agccaccgac 300
caaaaatggt cctacaccga attaaagtcg gatcaaacca agctcaacct ccccgcttat 360
ggtgaggtga atgggctgtt gaatccggcg ttggtggaaa cctattttgg gacgacgcgt 420
acgtctagca ctgcgaacca aaacagtaca accgtccccg gtatcggttt taaaattccc 480
gaacaaaata atgattcaaa ggctgtgctg atcacccccg ggttggcttg aacgccccag 540
gacgttggta acctcgttgt cagtggcacc agcttcagct tccagctcgg cgggtggctg 600
gtcagcttca cggactttgt caaaccccgc gcgggttacc tcggactcca gttaacgggc 660
ttggatgcaa gtgatgcgac gcagcgcgcc ctcatttggg ccccccggc cctgagcggc 720
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ggtgtgggcg gatcaagctc agtccgactc gcaaggatct accaccaccg caacaggggc 840
taccttaccg gagcacccga atgctttggc ctttcaggtg agtgtggtgg aagcgagtgc 900
ttacaagcca aacacgagct ccggccaaac ccaatccact aa 942

<212> Type : DNA
<211> Length : 942
SequenceName : SEQ ID 695
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
atgagttttg gtttagtggg cactgttaat aataacggtt ggaaatcgcc gtttcgacat 60
gaaacaaaat accgagcagg gtatgataag ttcaagtatt acaaaaccca ctaccggggt 120
gcaaaaaaag ctggaaccaa tgatgatcga tggagatgaa ctgcttggtt tgaccttgac 180
tttgcccacc aaaagatagt gctcattgaa aggggtgaac ttcaccgtca agcagattta 240
aaaaaatctg accccgcaac aaacgaaact tccaaaaccg tttggggtag cattaaagaa 300
aagctgttac aaaacgtcaa caacctccac tcagagaaag gagtattctt atggttccgt 360
caatctggtt ttacaactac tagaaactag 390

<212> Type : DNA
<211> Length : 390
SequenceName : SEQ ID 696
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
atggctgaac cgttggccgt cgatcccacc ggcttgagcg cagcggccgc gaaattggcc 60
ggcctcgttt ttccgcagcc tccggcgccg atcgcggtca gcggaacgga ttcggtggta 120
gcagcaatca acgagaccat gccaagcatc gaatcgctgg tcagtgacgg gctgcccggc 180
gtgaaagccg ccctgactcg aacagcatcc aacatgaacg cggcggcgga cgtctatgcg 240
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ggcctggctg gcgtcgcctc ggtcggtggt cagccaagtc aggctaccca gctgctgagc 360
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gttgttgcga cggtgccgca actcgttcag ctggctccgc acgccgttca gatgtcgcaa 480
aacgcatccc ccatcgctca gacgatcagt caaaccgccc aacaggccgc ccagagcgcg 540
cagggcggca gcggcccaat gcccgcacag cttgccagcg ctgaaaaacc ggccaccgag 600

caagcggagc cggtccacga agtgacaaac gacgatcagg gcgaccaggg cgacgtgcag 660
ccggccgagg tcgttgccgc ggcacgtgac gaaggcgccg gcgcatcacc gggccagcag 720
cccggcgggg gcgttcccgc gcaagccatg gataccggag ccggtgcccg ccagcggcg 780
agtccgctgg cggcccccgt cgatccgtcg actccggcac cctcaacaac cacaacgttg 840
tag 843
<212> Type : DNA
<211> Length : 843
SequenceName : SEQ ID 697
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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gctggtgcgc cgccgtcatg cgccggcctg ggcggcactg tgcaggccgg ccagatctgc 120
catgtgcacg cctcgggccc taagtacatg ctggatatga catttcctgt cgactatccc 180
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caggggtccc cgctgcgaga ccagccctac caaatggacg ccaccagcga acagcacagc 300
tccggccagc cgccgcaggc cacccgcagc gtagtgctca aattcttcca ggacctcggt 360
ggggcacatc cgtccacctg gtacaaggcc ttcaactaca acctcgcgac ctcgcagccc 420
atcaccttcg acacgttgtt cgtgcccggc accacgccac tggacagcat ctaccccatc 480
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gcccagggtg agctgctgcc gtcgtttgtc ggcgcttgcc aagcccaggt gccgcgcagc 660
gccattccgc cgctggcaat ctaa 684
<212> Type : DNA
<211> Length : 684
SequenceName : SEQ ID 698
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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gcggccggtg tgacttcgat catggctggc ggcccggtcg tataccagat gcagccggtc 120
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aaggccgccg agcacgggga tctgccgctg tcgttcagcg tgacgaacat ccagccggcg 360
gccgccggtt cggccaccgc cgacgtttcc gtctcgggtc cgaagctctc gtcgccggtc 420
acgcagaacg tcacgttcgt gaatcaaggc ggctggatgc tgtcacgcgc atcggcgatg 480
gagttgctgc aggccgcagg gaactga 507
<212> Type : DNA
<211> Length : 507
SequenceName : SEQ ID 699
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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ggcgtcacac cctcgttcgc ccacgccgat gagggtgcga gcaagctacc gatgtacctg 120
aacatcgcgg tggcagtgct cggcctggct gcgtacttcg ccagcttcgg ccccaatgttc 180
accctcagta ccgaactcgg cggaggtgat ggcgcagtgt ccggtgacac tgtggctgccg 240
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ggcggctatt cgtccagtcc gagccaatcg ggcagtggat acactgctca gccccggcc 720
cagccgccgg cgcagtccgg gtcgcaacaa tcgcaccagg gcccatccac gccacctacc 780
ggctttccga gcttcagccc gccgccaccg gtcagtgccg ggacggggtc gcaggctggt 840

tcggctccag tcaactattc aaaccccagc gggggcgagc agtcgtcgtc ccccgggggg 900
gcgccggtct aa 912
<212> Type : DNA
<211> Length : 912
SequenceName : SEQ ID 700
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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attgctgctg gtttgcgttg gtcggccgct gtaccgccgc tacacaaagg ggacgctgtg 120
accaaactgc tcgtcggggc catcgcgggc ggaatgctag cttgcgcagc tatattgggc 180
gacggaatcg cttcggccga tactgcgttg atagtacccg gtaccgcacc gtccccgtac 240
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ctcgctgacc tcaatgcgat tgccgcgggc ggatactacg gccacagcgc caccgcattc 780
tcggacccag ctcgcgttgc gcctagggac attacgacga caacgaacag tttgggtgcg 840
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gacagggctt atcagcccgg accagcaccc gctgtgaacc cgcgtgattt ggtccagggc 1020
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gccagtgccg ccaccagcac cgctgccgcc acggcagcag caacaaatgc gctccgcggg 1140
gccaacgtgg gcccgggcgc caacaaggcg ttgtcgatgg tccggggttt gctacccaaa 1200
gggaagaagc actag 1215
<212> Type : DNA
<211> Length : 1215
SequenceName : SEQ ID 701
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
gtgagcctgc taccaaccct gcagtccttc ctaccgccgc ccttcgacgc cattccgaac 60
cccatcgagg atcttgacgt tctcgtagcc gcagctgtag ccgtcgcggc tggcagtttg 120
ggggtatcgg cggcgcagct cggcgagatc taccgccacg acgtggtcga cgaggcccaa 180
aaggcgccgc attgcccagc cgaatccgac cagacacccg ctggggccgc gggtgacggg 240
gatctccctg aggtcggagg acgggtcacc agcccgccac agccgccggt cgccgcgctc 300
accggctact ccgctaacat cggcggactc tccgtgccgc acagctggaa tcttccgcca 360
gcggtgcgcc aagttgcggc gatgttcccc ggcgcgactc cgatgtatat gacggggagt 420
tcggacggct cctacgccgg cctggcagcg gcgggtttgg ccggcaccgg tctggccggt 480
cttgccgccc gcggtggctc cgcgccgacc ccggctgcag ccgccccggc cggagccggc 540
ggagccggcc cggctgccac caggcccgcc gcccagcaga cgcccgcggt ccccgcggcg 600
gccgccgggt cagccatacc tggcctaccg cccggtttgc cgcccggcgt ggttgccaac 660
cttgcggcga ccctggcggc gatccccgga gcgaccatca tcgtggtacc gccgtccccg 720
aacgccaatc aatag 735
<212> Type : DNA
<211> Length : 735
SequenceName : SEQ ID 702
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
atggacgtcg ctttgggggt tgcggtcacg gatcgggtcg cgcgtctggc gctggtcgac 60
tcggctgcgc ccggcaccgt gatcgaccag ttcgtgctcg atgtggccga gcacccggtc 120
gaggtgttaa ccgagaccgt ggtgggcacg gatcggtcat tggccggcga aaaccaccgg 180
ctggtcgcta cccggctgtg ttggccggat caggccaaag ctgacgagct gcagcacgca 240

ctgcaggact ccggggtcca cgacgttgcc gtgatatccg aggcgcaggc cgccacggcg 300
ctggtcgggg cggcacatgc cggctctgcc gtgctgttgg tgggtgatga gacggcaacc 360
ttatcggtgg ttggtgaccc ggacgcgccg ccgacgatgg tggccgtcgc gccggtggcg 420
ggcgccgacg ccacatcgac cgtcgatacc ctgatggccc ggctcggcga ccaggccctc 480
gccccggggg atgtcttcct ggtgggtagg tccgccgagc acaccacggt tcttgccgac 540
cagctgcgcg cggcgtcgac gatgcgcgtg cagactcccg acgaccccac gttcgcgctg 600
gcccgtggcg cggcgatggc ggccggcgcc gctacgatgg cgcacccggc cctggtcgcg 660
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ccgacgcagc agcccacgca acaaccaacc caacagatgc caacccagca gcagaccgtg 1560
gccccgcaga cggtggcgcc ggctccgcag ccgccgtccg gtggccgcaa cggcagcggc 1620
gggggcgact tattcggcgg gttctga 1647

<212> Type : DNA
<211> Length : 1647
SequenceName : SEQ ID 703
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
ttgaagaacg cccgtacgac gctcatcgcc gccgcgattg ccgggacgtt ggtgaccacg 60
tcaccagccg gtatcgccaa tgccgacgac gcgggcttgg acccaaacgc cgcagccggc 120
ccggatgccg tgggctttga cccgaacctg ccgccggccc cggacgctgc acccgtcgat 180
actccgccgg ctccggagga cgcgggcttt gatcccaacc tccccccgcc gctggccccg 240
gacttcctgt ccccgcctgc ggaggaagcg cctcccgtgc ccgtggccta cagcgtgaac 300
tgggacgcga tcgcgcagtg cgagtccggt ggaaactggt cgatcaacac cggtaacggt 360
tactacggcg gcctgcggtt caccgccggc acctggcgtg ccaacggtgg ctcggggtcc 420
gcggccaacg cgagccggga ggagcagatc cgggtggctg agaacgtgct gcgttcgcag 480
ggtatccgcg cctggccggt ctgcggccgc cgcggctga 519

<212> Type : DNA
<211> Length : 519
SequenceName : SEQ ID 704
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
atgacgcggc tgataccggg ttgcacgctc gtcgggctga tgctgacgtt actgcccgcg 60
cccacctcgg cggccgggag caacaccgcc accaccctgt tcccggtcga cgaggtcacc 120
cagctggaga cgcacacctt cctcgattgc caccccaacg gcagctgcga cttcgtcgct 180
ggagcaaatc tgcgcacacc cgacggcccg acgggctttc cgcccgggct gtgggcgcgc 240
caaaccaccg agatccgttc gacgaaccgg ttggcctatc tggacgcgca cgccaccagc 300
cagttcgaac gggtaatgaa ggcgggcgga tccgacgtga tcaccaccgt ctacttcggc 360
gagggtccgc cggacaaata ccagaccacc ggggtcatcg actcgaccaa ttggtcgacc 420
ggtcaaccga tgaccgacgt caacgtcatc gtgtgtacac acatgcaggt ggtctacccg 480
ggggtcaacc tcacctcgcc cagcacctgc gcgcaagcca acttttccta g 531

<212> Type : DNA
<211> Length : 531
SequenceName : SEQ ID 705
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
atgacaccgg gtttgcttac tactgcgggt gctggccgac cacgtgacag gtgcgccagg 60
atcgtatgca cggtgttcat cgaaaccgcc gttgtcgcga ccatgtttgt cgcgttgttg 120
ggtctgtcca ccatcagctc gaaagccgac gacatcgatt gggacgccat cgcgcaatgc 180
gaatccggcg gcaattgggc ggccaacacc ggtaacgggt tatacggtgg tctgcagatc 240
agccaggcga cgtgggattc caacggtggt gtcgggtcgc cggcggccgc gagtccccag 300
caacagatcg aggtcgcaga caacattatg aaaacccaag gcccgggtgc gtggccgaaa 360
tgtagttctt gtagtcaggg agacgcaccg ctgggctcgc tcacccacat cctgacgttc 420
ctcgcggccg agactggagg ttgttcgggg agcagggacg attga 465
<212> Type : DNA
<211> Length : 465
SequenceName : SEQ ID 706
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
atgatgcaac aagcggtgtc gggcattacc ggcgcgctcg gcggcgcggt cggcggcgtc 60
atgggcccac tcacgcagct tccccagcag gccatgcaag cggggcaggg agcaatgcag 120
ccgctgatga gtgcgcttca acagacctat ggcgcggagg gactggacgt cgcggacggg 180
gcgcggctgg tggacagcat cgaaggtgag cccggcctcg gcggcgagcc gggcgctggt 240
gacgtcggcg ccggcggcgg gggtggtggc accaccccga cgggctatct gggtccccca 300
cccgtgccga cgtcgtcgcc accgacgact ccagccgggg cgccggccaa gtcggtgacg 360
ccggacccgg ttagtggcac cccgcgggcg tcggggccgg ccggcatgac cggcatgccg 420
atggtgccgc cgggcgcgtt gggtgcgggc gcggaaggag ccaataagga caagccggtc 480
gagaagcggg tgacgggctg tgccgaatgg tcaaccggtc aagggccgct taacagtacc 540
gccgagtgtt ccggtgaaat ctgccgacga caagccggtg gtcaccaagt cgacgcgacg 600
gatccttgtt gtgccgaacg acgacaaggt taa 633
<212> Type : DNA
<211> Length : 633
SequenceName : SEQ ID 707
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
atgattcgcg aactggtcac caccgctgcg atcacgggtg ccgcgatcgg tggggcgcca 60
gtcgcgggcg cagacccgca gcgttatgac ggcgatgtgc cggggatgaa ctatgacgct 120
tcgctgggcg ccccatgctc cagctgggag cgcttcattt ttggacgagg cccctccggt 180
caggccgaag cctgtcattt tccgcctcct aaccagttcc cgccggccga aaccggctac 240
tgggtgatct cctacccgct atacggcgtc cagcaggtcg gtgcgccgtg tccgaagccg 300
caggcggccg cgcagtctcc ggatgggttg ccgatgctgt gtctgggagc ccgtggatgg 360
cagccgggat ggtttaccgg ggccgggttc ttccctccgg agccataa 408
<212> Type : DNA
<211> Length : 408
SequenceName : SEQ ID 708
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
atgaaaacca caggcacaac tatcaaactc ggcatcgtct ggttggtgct gtcggtgttc 60
accgtgatga tcatcgtggt gttcgggcag gtgcggttcc atcacaccac cgggtactcc 120
gcggtgttca cccatgtcag cgggctgcgg gccgggcaat ttgtccgcgc tgcgggcgta 180
gaggtcggca aggtcgccaa ggtaacgctg atcgacgggg acaagcaagt attggtggac 240
ttcaccgtgg atcgctcgct gtcactggat caggcgacga ccgcctcgat ccgctacctc 300
aacctgatcg gcgaccggta ccttgagctc ggccgcggtc acagcggtca gcggctggcg 360
ccgggtgcca cgatcccgct cgagcacacc catccggcct tggatctcga cgctctgctc 420
ggcgggtttc gcccactctt ccaaacgttg gacccagaca aggtcaacag catcgcctcc 480
tcgatcatca ccgtgttcca agggcaaggc gccaccatca acgacatcct cgaccagacc 540
gcctcgctga cggcaacgct ggccgaccgg gaccatgcga taggtgaggt cgtcaacaac 600
ttgaacaccg tgctggccac caccgtcaag catcaaacgg aattcgaccg cacggtcgac 660

aagctagagg tgctgatcac tggactgaag aacagggcgg acccgctggc cgcggcggcg 720
gcacacatca gcagcgccgc gggaacccta gccgacctgc tggggcggat cgtccattgc 780
tgcacagcag cttcgggcac ctcgagggca tccagcagcc gctcatag 828
<212> Type : DNA
<211> Length : 828
SequenceName : SEQ ID 709
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
atgactccac gcagccttgt tcgcatcgtt ggtgtcgtgg ttgcgacgac cttggcgctg 60
gtgagcgcac ccgccggcgg tcgtgccgcg catgcggatc cgtgttcgga catcgcggtc 120
gttttcgctc gcggcacgca tcaggcttct ggtcttggcg acgtcggtga ggcgttcgtc 180
gactcgctta cctcgcaagt tggcgggcgg tcgattgggg tctacgcggt gaactaccca 240
gcaagcgacg actaccgcgc gagcgcgtca aacggttccg atgatgcgag cgcccacatc 300
cagcgcaccg tcgccagctg cccgaacacc aggattgtgc ttggtggcta ttcgcagggt 360
gcgacggtca tcgatttgtc cacctcggcg atgccgcccg cggtggcaga tcatgtcgcc 420
gctgtcgccc ttttcggcga gccatccagt ggtttctcca gcatgttgtg gggcggcggg 480
tcgttgccga caatcggtcc gctgtatagc tctaagacca taaacttgtg tgctcccgac 540
gatccaatat gcaccggagg cggcaatatt atggcgcatg tttcgtatgt tcagtcgggg 600
atgacaagcc aggcggcgac attcgcggcg aacaggctcg atcacgccgg atga 654

<212> Type : DNA
<211> Length : 654
SequenceName : SEQ ID 710
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
gtgataagca ccacaagaat tgatttccta tggatattgt cggtagcgtt cgcgtccatg 60
attgctcttg caacgctgtt gacgcttatc aatcaagtcg tcggcactcc gtatattccc 120
ggtggcgatt ctcccgccgg gaccgactgc tcggagctgg cttcgtgggt atcgaatgcg 180
gcgacggcca ggccggtttt cggagatagg ttcaacaccg gcaacgagga agccgccttg 240
gcggctcggg gctttcaaca gggaaccgcc cccaatgcct tggtgatcgg ttggaatggc 300
caccacacgg cggtgacgct gcccgatggc acgcccgtat ccagtggtga aggcggtggc 360
gtgcgggtcg gtggcggtgg cgcctaccag cccaaattca cccaccacat gtatctgccg 420
atggatgtgg acgcgggaga agaccagccg ccggcgccag atgagccggt caccgcggtc 480
gacgacgtgg aaccggaaat gcctgcaccg tgcccgaccc agcgcccgcc ggtgaccccg 540
agacataacc tgtgcaacaa actccggact atgccagggg cgctctcggc cgcgctggcc 600
gcggcggcgc cggtctggcc ggcccctata agcggctgcc gcgggttcag cacgtccctc 660
ttagcaaaaa gaaatcaccc agtaatcgtc gggaaatag 699
<212> Type : DNA
<211> Length : 699
SequenceName : SEQ ID 711
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
atgacgacga tgattactct tcggcgacgg ttcgcggtgg ccgtcgccgg cgtcgccact 60
gccgccgcga cgaccgtcac cctggctccc gcaccagcaa atgccgccga tgtctatggc 120
gcaattgcct actccggcaa cggctcgtgg ggccgatcgt gggactaccc aacccgggcg 180
gctgccgaag ccaccgccgt caagtcgtgt ggctactccg actgcaaggt gctcaccagt 240
ttcaccgcct gcggcgccgt cgccgccaac gatagggcat accagggagg agttggaccc 300
accttggccg ccgccatgaa ggacgccctg accaagctcg gcggcggcta catcgacacc 360
tgggcctgca actaa 375
<212> Type : DNA
<211> Length : 375
SequenceName : SEQ ID 712
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
atggccggac tgaacattta cgtgaggcgc tggcggacag cgcttcacgc aaccgtgtcg 60
gcattgatag ttgccatcct cggactcgcc atcaccccgg tcgctagtgc ggcgacggcc 120
agggcgacgt tgtcggtgac atcgacgtgg cagaccggtt tcatcgcccg cttcaccatc 180
acaaactcga gcacggcgcc gctaaccgat tggaagcttg aattcgactt gccggcagga 240
gaatccgtct tgcacacatg gaatagcacc gttgcacgat ctggcacgca ctacgttctc 300
agcccagcga attggaatcg catcattgcc cccggtggtt cagccacggg cggcctaaga 360
ggcgggctga ccggttctta ctcgccgccg tcgagttgtc tgctcaacgg gcaatatcct 420
tgcacctag 429
<212> Type : DNA
<211> Length : 429
SequenceName : SEQ ID 713
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
atgctgactc gcgctatcaa gacccagctg gtgttgttga cggtgttggc ggtcatcgcg 60
gtggtggtcc ttggttggta tttcctgcgg atacccagcc tggtcggcat cggtcgatac 120
acgctttatg ccgaattgcc tcggtccggg ggtctatacc gaacagccaa cgtcacatat 180
cggggcatca ccatagggaa ggtcaccggc gtcgaaccaa ccgagcgggg cgcgcgagca 240
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gtgtcggcgg tcggcgagca gttcgttgac ctggtgtcga cccgcaccag cggtccgtat 360
ctgcggcatg ggcagacgat caccacgact acggtcccca gccagattgg cccggcgctg 420
gacgccgcca accgtggatt ggcagtgctg cccaaagacc gggtcgcgtc ggtgctgcac 480
gaggcgtcgg aggccgtggg cgggctggga tcctcactga atcgcctcat cgaagccacc 540
caggcaatcg cccacgatgt caggggcagc ctcgaggaca tcgacgacat catcgagcgt 600
tcggcgccta tcatcgatag ccaggtcaat tccggcaacg agatcgcccg ctgggccgcc 660
aacctcaaca cgctggccgc tcagaccgcg cagaccgatc cggcggtgcg aagcattctg 720
gccaacgcgg caccgactgc cgatcaggtc aacgccacgt tcagcgacgt gcgggagtcg 780
ttgccgcaga cgctggccaa tctcgaggtc gtaatcgata tgctcaagcg ctaccacaac 840
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cagatgctca gctgtcccgc gccggccgcg cgttgtgacc agccggtgaa gccaggccag 1260
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aatgggcaac aacccaaccc gtgcgtctac accccgagca catttcctac aaccatttac 1440
gacgtgcaga gcggcaaagt cgtagcaccc gacggtgtgg tgtattccgt tgaggcttcg 1500
actcatgccg gagccgacgg atggaaggtg atgctggcac caaccggctg a 1551

<212> Type : DNA
<211> Length : 1551
SequenceName : SEQ ID 714
SequenceDescription :

Sequence

<213> OrganismName : Rickettsia prowazekii strain Madrid E
<400> PreSequenceString :
atgttaaata atacacaatt tttaaatttg atgaaatcct atatgaaacc agaattttat 60
atgagttcta taaaaaatac cactaatcta gatctttcat ctatcaccaa tacaattcaa 120
aaagccatga atatttttt taccactaac aaaatttcca cagaaagtat gcaatctttg 180
tttaagaaaa attccgagat tatacaaaat aatattaata ctattttaaa tagtactaaa 240
gaagtaataa attctaaaga ttttaaacaa gctactgaat atcatcaaaa atgtgtaaaa 300
tctatttatg aaacatctat ggacaatgct aaggaattag caaatattgc ttatgaagct 360
tcaaataaaa tatttgaagc cgcaaataaa catattacca agaatattca taatgcttct 420
aataatatac ataatactgc agaacaagta caaaaaaact ttaataacaa atctgcttaa 480

<212> Type : DNA
<211> Length : 480

SequenceName : SEQ ID 715
SequenceDescription :

Sequence

<213> OrganismName : Rickettsia prowazekii strain Madrid E
<400> PreSequenceString :
atgaatatta aattagttac atatttttta atattagtaa gctcattaaa agtaaatgct 60
gatttaaatc atattcaaga tagttttaaa tatcaagaag cagagcagtt aacaatagaa 120
ttaccttgga atgactgtac tgcaattcat aaattcttag aagaaaagtt atttttttca 180
gaacaacaaa taaaaaaaga aaataaaatt catgagaaat ataagcaatt ttatttacaa 240
cataataata agctttctga tttttctatg caatttctag aaaaaaaatc tgaaattaat 300
agtgtcgaaa ctttaatatc aggcttttta aaattttgtg aagataattt tcaaacaagt 360
aaaagtaaat cgcattcttt aaatttttttc caaaaacaac aagaccaatg gttacataat 420
ataagaaatg agaattataa aacatattat aagaagaaat atgaagacaa tacctttaga 480
aatattaatt aa 492
<212> Type : DNA
<211> Length : 492
SequenceName : SEQ ID 716
SequenceDescription :

Sequence

<213> OrganismName : Rickettsia prowazekii strain Madrid E
<400> PreSequenceString :
atgaaaaagt acttttaat tgctactgca agtgcaacaa ttttatcttc tagtgtatcg 60
tttgcagagt gcattgataa tgaatggtat ttaagagcag atgcaggtgt agcaatgttt 120
aataaagaac aagataaggc aacaggtgtt aaattaaaat ctaataaggc tattccaatt 180
gatttgggta ttggttatta tatttctgaa aatgtacgtg ctgatttaac tttaggaact 240
acaataggtg gaaaactcaa gaaatacgga gcagcaacta atacacattt tactggtact 300
aacgtttcag tgagccataa gcctactgtt acacgtttgc ttattaacgg ttatgtagac 360
ttaacaagtt ttgatatgtt tgatgttttc gttggtggtg gtgtcggtcc tgcattagtg 420
aaagagaaaa ttagtggggt aagcggtctt gcatctaaca ctaaaaataa aaccaatgta 480
tcatataagc tgattttcgg tacttctgcg caaattgcag atggtgttaa agtagagcta 540
gcatatagct ggataaatga tggtaaaaca aaaactcata atgtaatgta caaaggggca 600
agtgtgcaaa ccggtggtat gcgttatcaa agtcataacc tgacagtagg tgtaagattt 660
ggtatataa 669
<212> Type : DNA
<211> Length : 669
SequenceName : SEQ ID 717
SequenceDescription :

Sequence

<213> OrganismName : Rickettsia prowazekii strain Madrid E
<400> PreSequenceString :
atgaagaaga atatgagaaa gcaaatgctt aaaatcatat caatcattat tatttctctt 60
ttattaagca gttgctccga atctacgcgt gatgaaaatg gattacttac agatagtcaa 120
agtactataa ttcgagatta tataatatcg caaaattcta aaaatcttaa agtgaacctt 180
aaagaaaagt ttggttccaa tttaaaagga gtaaaattaa taggaataaa gttaacaaat 240
gaagatttat cgggaataga tttcacttca tgcgaaatat tacggactga cttcatgggt 300
agcaacttag aaaaagcaat acttacaaat tcggtaattc aagaaagtaa ttttgcggat 360
tcagtaataa aaaatatttc aggctataat gctgattttc aaggttcaat ttttaataat 420
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agtactataa tcaatgtcaa ttttgaaaat tctaaattta gtaatgtatt atggtgtcac 540
agtaatattg acagtagtaa ttttcaaaaa actcatctaa aaaataatag ctttaaaaat 600
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acaaatttta ctaataatta ttttgaatct agtgacctaa gtaacactaa attcacatca 720
gtaatcatta aagattctaa cttcacacaa agtatttta attcagtaaa tttcaataat 780
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caaattccac caaataatat agtaatcaat tctgaaaaag atttacaaaa catatctaat 1440
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ttttcaaaaa gcatctttaa aaaagctaat ttaacaaata cagtaataaa aaattctatt 1560
ttaaaagatg ctaatttttc tgcagcaata cttactaaaa cagatttctc aaaatcgata 1620
ttaacaggta gtatatttaa gtttgctcaa attgatcaga catgttttag taattccgac 1680
ttaacaaata ctgattttac tgaagcaaca attaaaaata ctgcatttga taatgctaat 1740
acacacggta taaaaggatt agaataa 1767

<212> Type : DNA
<211> Length : 1767
SequenceName : SEQ ID 718
SequenceDescription :

Sequence

<213> OrganismName : Porphyromonas gingivalis W83
<400> PreSequenceString :

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gtggcagccc taccttctat cggtattcaa gagtcaagtt gtacccgaat cacgttcgag 180
gttgttttcc ccggatttta tagtgtggaa aaacgagaag gcaaccaagt ctttcagcgc 240
atttccatgc cgggttgtgg ctcgtttggg aatctgggcg aagctgaatt gcctgttttg 300
aaaaagatga tagccgttcc ggaattttca acagctaacg ttgctgtaaa aatcaaagag 360
acggagacat tcgacaatta taatatctat cctaatccta cctatgtcgt agaggagttg 420
cctgaggggg ggacttatct ggtagaggct ttcgcgataa acaatgacta ttatagccaa 480
aatgtaagcc tcccttctac tcactatgtc tattctcaag acgggtattt tcgctcacaa 540
agatttatcg aagttaccct gtatcctttt cgatacaacc ctgtccgaca agaaattcta 600
tttgcaaaaa aaatcgaggt tacaataact ttcgataatc ctcagccacc tttacaaaaa 660
aacaccggca tatttaacaa agtagcctcc tctgcattta ttaattatga agctgatggc 720
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caggtctctg caatagactc gatatttgac tgcttgaata atggttccca tcatttttat 1500
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tacagcatac agttcaatac atccaacttt gatcccggtt tctacctggt aacgctaaat 3840
gttgatcaga aaattataga tacggaaaaa ttacgaatca aataa 3885

<212> Type : DNA
<211> Length : 3885
SequenceName : SEQ ID 719
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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acgagtggaa acctgaatac tgacaccata ataagagtca actctgacgg ttcggttacc 120
ccctcttttt ctgacggaga tgatacattt attgttactg cgggtaatca cgcagtcggc 180
gttcttgcgt gtgcatctcc cggaagcgcg tgtgcgtgtg tatcttctct tgatgaagaa 240
agtactgccg atacaggaag taatgaaaat aatgccatag caaaactgga tatggcaaaa 300
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aaggctggtg acacgcttga ttataccaat gccagcgtta cattaaccga tgttgatatc 420
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ctgaatccag cggccagcgt ctgggggaat gtgggcgtgc agctgggtga taatggctac 2280
aatgacaccg cagtgatggt gggcctgaaa tataagttct ga 2322

<212> Type : DNA
<211> Length : 2322
SequenceName : SEQ ID 720

SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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cacgctgaag gtaaattttc cctgggcgca ggcgtaggtg tcgttgagca cccatataaa 120
gattacgata ccgatgttta cccagtaccg gtaatcaact atgaaggcga taacttctgg 180
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accgcttact ggtcgccgct ttacttcaaa gcgaaagaca gtggcgatca ccaaatgcgt 300
cacctggatg accgtaagag caccatgatg gctggtctgt cttatgctca ctttacccag 360
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tgggatatgg cctggttgta tcgttacacc aacggtggcc tgaccgtgac tccgggtatt 480
ggtgtgcagt ggaacagcga aaaccagaac gaatactatt atggcgtatc gcgcaaagag 540
tccgctcgca gcggtctgcg tggctataac ccgaatgaca gctggagccc ttaccttgag 600
ctgagcgcca gctacaactt cctcggcgac tggagtgttt acggtaccgc gcgctacacc 660
cgtctgtctg atgaagttac tgacagcccg atggtggata aatcctggac tggcctgatt 720
tctaccggga tcacctacaa attctga 747
<212> Type : DNA
<211> Length : 747
SequenceName : SEQ ID 721
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgaaaaaaa ttgcgctagc aggtctggcc ggaatgctgt tggtttctgc atcggtcaat 60
gcaatgagca tcagcggcca ggcgggtaaa gaatacacca atattggtgt cggttttggg 120
actgaatcga cgggcctggc tttaagcggt aactggacac ataacgacga cgacggtgac 180
gtcgcgggcg tggggctggg gttgaatctg cctctcgggc cgttaatggc gaccgttggc 240
ggaaaaggcg tgtacaccaa cccgaattac ggcgatgaag gttatgccgc agcggtagga 300
ggtggtttgc agtggaaaat tggcaacagc ttccgtttgt ttggcgagta ttactactct 360
ccggattcgc tctccagcgg tattcaaagt tatgaggaag cgaatgctgg cgcgcgttac 420
accattatgc gtccagtcag tattgaggcg ggttatcgct acctgaatct gtcgggtaaa 480
gacggtaacc gcgacaacgc tgtggctgac ggcctgtatg ttggggttaa cgccagtttc 540
tga 543
<212> Type : DNA
<211> Length : 543
SequenceName : SEQ ID 722
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgactacct tgaccgccag ggtgtttaca acggcagaga taatttatcg gaaaacagtt 60
atcgcattgg tgtgtcattt aaactgtagt agacaggaga cagtcacaat gaataaaact 120
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ccgatgggca tggcgggtca tgtgacttttt gtacacaacg gcaaggctta tgttactggc 540
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tcaaccgcta tagataaaat caacgcccac tattttgaca aaaaagcaga agattatttc 660
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ggtcgggcct acggagtatc attgccctgg aataatagtt tattaattat tggcggtgaa 1140
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acagtacaaa actaa 1215
<212> Type : DNA
<211> Length : 1215
SequenceName : SEQ ID 723
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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gccggaggtg caagtgcact ccaagcggct tttcagaaag catcagcgag tatggaaacc 120
ggcggtgaca tgtccagcat ggggtcagtt gtcagcagtg gcggaaacgg tggtggtgaa 180
gcgggtactg ctggcagtag cccattcgcc caagcggctg gctttggtga cagcggcagt 240
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acaggcggaa aactggctgc ttcgatacgc gaaagcatgg agccgaaaga agcaagccaa 420
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aggagttag 489
<212> Type : DNA
<211> Length : 489
SequenceName : SEQ ID 724
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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gatgacaaaa acatgtacat gtatttttt gaagagatga cggtctatgc tcctgtccct 120
gtacccgtaa acggcaacac gcattacacc agtgaaagca tcgagcgttt accgaccggg 180
aatggcaata tcagcgatct gctgagaacc aaccctgcgg tacgcatgga ttcaacgcaa 240
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gatgtcagct tactggacaa tgtgacgctt tatgacagtt ttgtgccggt tgaatttggt 480
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ctgaaacaac aaaacctgac gatcagtgcc gatattctca atgtactgga tagcaaaacc 2280
gctgttgata caacgaacac cggtgtggcg acctacgcca gtggccgtac tttctggctt 2340

gatgtcagca tgaaatttta a 2361
<212> Type : DNA
<211> Length : 2361
SequenceName : SEQ ID 725
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgaagaaaa cattgttagc aatcatgctg gcggggacag cttttgcttc tcaggcggga 60
actttagtaa gccagggtac tgaagcgtca gctaatctta ctttgaccaa gcctatcgtt 120
gttaataata ccattcaacc agtgaaaggg gtatatagcg gtacgttaac tgcatggacg 180
cctttggcaa caggtattgt tggcgcatct gatgggcaga gccacgacta tgctgtaact 240
ttcccggatg atatttatgc ggagagcagt acttcagcgg atgcagtaat ttctggtgac 300
aataacccgg accataaact gaaagtttcc ctgacaacgc ttgagcagga tcctccttca 360
gctgcctccg aagagattgg cggtaagcgt tatatgatgc tgaaaaatac tggaacaggt 420
ggtgcctatc gcgtcgtttc ccatatgaaa gaacaggttg ttgagccaga ctcttacacc 480
atccgtaccc aggcttatat ctacgcagaa taa 513
<212> Type : DNA
<211> Length : 513
SequenceName : SEQ ID 726
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgggtattt accactggtc ccggaagaca aaaatgaaac ggacaaaatc catacgccac 60
gcatcgttcc gcaaaaactg gagcgcacgc catctgacac cagtcgctct cgcggttgcc 120
actgtttttа tgctggctgg ctgtgaaaag agtgatgaaa cagtgtctct ctatcaaaat 180
gctgacgact gttcagctgc aaacccaggc aaaagcgccg aatgtaccac cgcgtacaac 240
aatgcgctga aagaagccga acgtactgcg ccgaaatacg ccacccgtga agactgtgtt 300
gctgaatttg gtgaaggtca gtgtcagcaa gcaccagccc aggctggcat ggcaccagaa 360
aaccaggcgc aggctcagca atccagcggg agtttctgga tgccgctgat ggccggttac 420
atgatggggc gtctgatggg cggcggcgcg ggatttgcac agcagccgct gttctcctcg 480
aaaaacccgg ccagtccggc ttacggtaaa tataccgacg cgacgggtaa aaactatggc 540
gcagcccagc caggccgcac catgaccgta ccgaagacgg caatggcacc aaaaccggcg 600
accaccacta ccgttacccg tggcggtttt ggtgaatctg ttgccaaaca aagcactatg 660
cagcgtagcg caaccggcac ctcttctcgt tcaatgggtg gctga 705
<212> Type : DNA
<211> Length : 705
SequenceName : SEQ ID 727
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgacaaaaa tgagtcgcta cgccttgatt accgcgctgg cgatgtttct cgccgggtgt 60
gtggggcaac gtgaacctgc accggtagaa gaagtgaaac cagcgccgga acaaccagcc 120
gagccacaac agcctgtccc cacagtgccc tcggtgccga cgatcccgca gcagccaggc 180
ccaattgagc acgaagatcg aacggcaccg cctgcgccgc atattcgcca ttatgactgg 240
aatggcgcaa tgcagccgat ggtcagtaag atgcttgggg ctgacggggt gactgcgggt 300
agcgtcctgc tggttgatag cgttaacaac cgtactaacg gttcgctgaa tgccgcagaa 360
gcgaccgaaa cgctgcgaaa tgcgctggct aataacggga aatttaccct ggtttccgcc 420
cagcaactgt cgatggctaa gcaacagtta ggtttgtcgc cgcaggacag tttaggcacc 480
cgtagtaaag ccataggcat tgcccgcaat gtcggcgctc attacgtgct gtactcctgc 540
gcctctggca acgttaacgc tccgacccta caaatgcagc tgatgctggt gcagacgggc 600
gaaattatct ggtcaggtaa aggtgccgtt tcgcagcaat aa 642
<212> Type : DNA
<211> Length : 642
SequenceName : SEQ ID 728
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgacgaaac ttatgcaatt tgttcagagg tgctattata tgactaataa gaaaatgtat 60
tttatattaa tacttgtttt cacattgcta caggtgtgtt tttttgctct ctggaaggct 120
cgtgatggta gcacaacgtc tcttgaatgt acgtcgacgt taacaagaaa tgctaaaaca 180
gatcattctt tatactactc tgctaacctt tcagtcattt taaaaaaaga tggtagcggt 240
agttttacga ttgttggctt aactgatgaa gatacaccga ggaaattttc ccattcgtat 300
ttttttacct acaaaatага tagtaacgga cggatctcag gtaatgctaa ggccaaagtt 360
tcgggactgg aaaatcagat aaaggatgag aacttcagac tcaattttct cgatgcatct 420
ttaacaggta aaggcaatgc gaggctaagc aagtttaata atgtctatat ttttagtatc 480
ccggggttga tcattaacac atgtgctcca atataa 516
<212> Type : DNA
<211> Length : 516
SequenceName : SEQ ID 729
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgggcagga taagctcggg aggaatgatg tttaaggcaa taacgacagt cgccgcactg 60
gtcatcgcca ccagtgcaat ggcgcaggat gatttaacca ttagcagcct tgcaaagggc 120
gaaaccacca aagctgcgtt taatcagatg gtgcaagggc ataagctacc tgcatgggtg 180
atgaaaggcg gtacttatac tcccgcacaa accgtaacgt tgggagatga gacgtatcag 240
gtgatgagcg cgtgcaaacc gcatgactgt ggctcgcaac gtatcgctgt gatgtggtcc 300
gagaaatcta atcagatgac ggggctgttc tcggctattg atgagaaaac gtcgcaagag 360
aaactcacct ggctgaatgt gaacgatgcg ctttcgattg atggtaaaac ggtgctgttc 420
gcggcgttga ccggcagcct ggaaaaccat ccggatggct ttaattttaa ataa 474

<212> Type : DNA
<211> Length : 474
SequenceName : SEQ ID 730
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgaaaaaac aatttttgga aaaagctgtg tttactgttg cggctacggc agcaacagtt 60
gttttaggaa ataaaatggc tgatgcagac acttatactc ttcaagaagg agattctttt 120
ttcagtgttg ctcaacgata tcatatggat gcttatgagt tagcttctat gaatggaaaa 180
gatattacca gtctgatttt gccgggtcag actttaactg ttaatggttc ggcagcaccg 240
gataatcagg cggcagcgcc aactgacact acgcaagcaa ccactgaaac gaatgatgcg 300
aatgccaata cttatcctgt tggtcaatgt acttgggggg ttaaagctgt tgcaacttgg 360
gcaggcgact ggtggggcaa tggcggtgat tgggcctcta gtgcttctgc acaaggttac 420
actgtcggta acactccggc agtagggtct attatgtgtt ggacagatgg tggttatgga 480
catgttgcct atgtcacagc tgttggtgaa gatggtaaag ttcaagtact ggaatccaat 540
tataaagatc aacaatgggt tgataactat cgtggttggt ttgatccaaa taatagtgga 600
acaccaggca gtgtcagtta tatttatcct aactaa 636
<212> Type : DNA
<211> Length : 636
SequenceName : SEQ ID 731
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgtctatta aaaatatttt agaaaacaaa acaacaacaa ttaaagttag ttttgcagga 60
attgcaacag cagctagttt aattttacct atggcagtac aggcagaaac tacttatact 120
gtgaaatcag gagatacttt atcagagatt gcttcaacac acggaacaac tgttgataaa 180
cttgctaagt taaataaaat taataatatc catcttatcc atgctggtca aattttagaa 240
ttagatgcag caacagaaga tactgatgca acgccagtac aagaaagtca gataaatgaa 300
gcagaaacct cagcatctgc caaaactagt caaacgagcg aagtgacgac aacagcaccg 360
gtacaagaaa gccaaacaag tgaagttata acttcagcac cagctgaaac cagtcagaca 420
agcgaagtgc caactgaagc caaccaaaca aatgaagtaa gttcagcagt atcggttgaa 480
accagtcaaa cgagtgaggc gacgacttca gctccagtgg aaactagtca gacaagcgaa 540

gcaacgacag cggaaccaac tgagaccaag accagccaaa caaatgaagt agcagcttca 600
gctgaagaaa accaaacaac atctaatact agcggtttga gcacatctga tgcagctgca 660
aaagaattca tcgctcaaaa agaatcaggt ggtaattata atgctaaaaa tggtcaatat 720
tatggacgtt atcaattgag tgattcttac ttgaatggtg atttgtcaga agaaaatcaa 780
gaacgtgtag cagatgctta tgtatcaagt cgttatggtt catggactgc tgctcaagct 840
ttctggaatg ctaatggttg gtattaa 867

<212> Type : DNA
<211> Length : 867
SequenceName : SEQ ID 732
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgaaatgtc aagcgtttga agattttaaa gctacaagtt tgaataagct gtcttatacg 60
acaggtggag ctactgatgg tgaaattata gctaatcgga tgttacaagg taaagctact 120
aagggcgaaa ttactatgta tacttggaac attattcaaa atggctgggt gaattcactc 180
gtgtcttggg gtattggtgg ttataatagt tctataggat actcagctca aggtaataga 240
ggatttagta attatccata cgatgtttct atggattcag ataatagcag tagttcaagt 300
aatacgacag gtggttatgt taattataac cagagtttta attctggatg gtaa 354

<212> Type : DNA
<211> Length : 354
SequenceName : SEQ ID 733
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgcgctatt cacaaatttg tcgtaaaagt ttggctttgc tggctacagg aatgatttta 60
actacctcaa ccttacctag tataagtatt ctagctgagg acagtactgg agcacctgct 120
aggccagatg gacaagctcc tgctggaggt ggtgctaaca ccacaactta tgattacagc 180
ggaatcaaca gtggtgttct agttgctaat ggtagcaagg tcacttccag ttccaaaacc 240
aaatcaacta cttccgccca aaatacagct cttgttcaaa acggtggtag tttaacactg 300
cataaagcga atttaataaa atccggtgat gataacaatg gtgacaatga taatttttac 360
ggtattaatt ctattttact agcagtcaat gaaaggtcaa aagcttatgt ttcgaattcc 420
aaactaaaag ctagtagctc tggcagtaat gggatttttg caactgataa ggcaaccatc 480
tacgctaata aaacaagcat tgcgactaca gctgataatt cacggggact tgatgccact 540
tacaatggca atattattgc taataagatg gccatttcta caaaaggtgc tcacagcgct 600
gctattgcaa ctgaccgtgg tggcggcaat atttccacca ctaattccag tttaaatact 660
agtggctctg gctcacctct tctttattca acaggcaata ttcaagttaa tcacgttaca 720
ggaacatcta gtaacagcca aattgctggt atggaaggtc ttaataccat tcttattcat 780
aattctaatt taattagtac catgacaaac aaaactgcca gtgacccgat tgccaatggc 840
gttatcatct atcagtcaca atccggtgat gccgaagcaa caacggggca aagtgcccac 900
ttcgagctca gcaagtctaa attaacttct tccattactt caggttctat gttctacctg 960
acgaatacct ctgcaaacat tatccttaat caatccacct tgaattttga tgcaaataag 1020
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ggggcaacag ttaactttac tggccataag cagacactta aaggggatgt tgatgtggat 1140
agtatttcga ccttaaatat gtacctgctt gataaaacca actacactgg caaaactgct 1200
gtatcaacca acagtaccaa tatatcccca agcacgtctc ctattaccat gaatatttct 1260
aaaaattcca aatgggtgct aactggtcat tcgacagtaa ccaatctcaa tgctgaaaaa 1320
ggtgctaaaa ttgttgataa agacggaaaa accgtcagcg tcatctcttc aagcggacaa 1380
aaacttgtta aaggtaaaag caaatatagc ctaacagtca caggaactta cagtcaaaag 1440
gtaacaacca gctcaagtaa caaacccagc agcagttaca ttaaccgtag tgacttcgat 1500
aattatttta aaacaacaac agcctttgta aataatacca aaaatacaag taattaa 1557

<212> Type : DNA
<211> Length : 1557
SequenceName : SEQ ID 734
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :

atgaacaaga taggtgatac tctacgtgat gctcgtattg aaaaaaaatt gagttttgat 60
gatgttgtag ataaaactgg aattgctcct cactatatac tggcaatgga gttagatcaa 120
cttaaattat taccagaagg caaaacaaat gagtatttag aaaaatatgc tcatgctgtt 180
ggcttagatc cggtttctat tattcatggt tatcgcaatc aggaaatgag cgatgaactt 240
atcctacctt cttctgcaga attggctgct tcttcagata gcaatataga aaagaaaaat 300
gaaggaaaat caattgaaga acctcaagag ttagctattg atagtttgga tgttactcaa 360
aatattacag aagagactcc ccaaatagaa gattttaagg ttgaatcaga ggaggcaagt 420
aaaaaaatag aaaaaatacc atctcgactt agtaaatatg attatgatga agaaccgaaa 480
aagaaatttc catgggcttt aattctgcta attttacttg ctttaactat tatcagttat 540
gttggatatg tggtttataa tcagctgcaa actgattcaa ataagactga attaagtacc 600
tctacgaaaa aatctaagga tactaaaaat gatgccaatt caacgacaca aagtcagacc 660
agcataacaa cagactttgc tgatggtgga aataatatca ccttaagtaa tactaatgga 720
aaagtagagg ttacctttac tttgacaggg gatgaggaaa gttgggtttc agcaactaac 780
actactgatg gagaatctgg aacaactcta acagcaacag ataaaactta tactgttact 840
ttagcagaag gttcaacaac atctatgctg acagtcggat cacctagcgg tgttgaaatt 900
acgatcaatg gtcaaaaggt ggatactaca aaccttgtta atgctggttt gactaatatt 960
aatttgacag tccaataa 978

<212> Type : DNA
<211> Length : 978
SequenceName : SEQ ID 735
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgaagagca gaaaacgtca gcgaaaaggg ctggttcgaa aaaatgaaat cattatttta 60
actctttttg tcgcatcagc cgtttcactc ttagcattta ccaattcttt tggggtactt 120
gctaagagtc ttcatcttga aaaaatcaat aaatcgataa ctatttcgct tccttttggt 180
aaaaaaaaga tggaacaaac agcacgttac tattcaggtg aacaggttca gatcagttcc 240
tcagctaaaa aagacagtct tggaaaaggg ctgtctcatt accaaaattg gattgggaca 300
gttaaaaaga taaaatcaca aaaagacagt cgtcaaaagc atcattatag ttatgaagtt 360
acatttgata atggcaaagc tttgaaatat gttcaggaaa aagacttagt taaaacaaaa 420
agatctaaat acagcaaagg tcaaattgtc aaattaaaat cctctgcgac agctgattta 480
gatggcagca gtttaacgga ttatcgtgca tcagctggta aaatcgatca tatttcttat 540
aatcatagca ataccacagg tggctataag tatgatatca cctttgatga aggcggcaag 600
gtgactaata ttcaagaaaa agatttggat aaggtttatg aagttcagct aaaatcagaa 660
aatactgcag ctcaaaataa tgagattctt aaacaagctt ttgcatatgc taaacaacat 720
tctggtacta tcttaagttt gccaaacggt gaatttaaga ttggcagtca gacaccagac 780
aaggattata tcactttaac atctgatact gaaattcgtg gagataatac gacacttttg 840
gttgaaggat cggcttattg gtttgctttt gcaactggga catcagctag tgatggtgta 900
aagaatttca ccatgcgcaa tatcaatata aaagccagtg atttggaaaa aggaaatcag 960
tttatgatta tggctgatca tggtgataat tggaaaattt gtaacaatag ttttaccatg 1020
gtgcataaaa aaggaagcca catttttgac ttaggttcct tgcaaaattc agcttttgaa 1080
ggaaatcaat ttactggcta tgcccctgaa ttaactaatg tcagtaagat tgatgataat 1140
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gtttgggatg gtgggttgat aaaggctatt gatccaaatt atgaaaatta taataaagag 1260
aaacagttgt gcaataacat cacgattgct aataactctt ttgttcctta tatagacagt 1320
catggtaaaa taatagcata cagcggaact atcggacagc actcttctga tgtcggcctt 1380
gtcaaaattt atgataatgt ttttagtaac tctttggtca gccgtttcaa tcaaaatggc 1440
aaaagcgagg cgtggatttt taaagctatt cacctaaaat caaattataa taatgctgtt 1500
tatgccaatt ctatcagtta a 1521

<212> Type : DNA
<211> Length : 1521
SequenceName : SEQ ID 736
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgagaaaac ttaaagtggc acttttgca agcagtattt taggaatgct ggctgttagt 60
tcttatacgg cagcagatac agaggataat caggtaacga ttagccatta taatgaacag 120
gctggaactt ttgatgtcaa cgctgtacag gcagccaacg gaaaaactat tcaatcgata 180
gatgttgcga tttggtctga agaaaatggg caggatgatt tgaaatggta tcatgccagt 240
aatgatggca gcaatcaatt gacagttcat tttaatgctg agaatcatgg cagtaaggta 300
ggttcttata ttgcgcatgc ttatattacc tatacagatg gtaatcgagt cggggttaat 360

ttgggaaaac gaaaattatc cttatctgca ccgcaattat ccttaaaaca aggtggcctt 420
caactatttt ctaagctgaa acctagtgca gcggatcaac ttttttcagc agtttggtcg 480
gatgagaatg gtcaagatga tcttcattgg tacacggcag atgctgacgg gaatactttg 540
gctggctatg ctaatcataa aggttatgga acttaccatg ttcatactta ccttaagcaa 600
aatggtaaga tgataccaat tagtgctcaa gatattgata ttcctaaacc gaaagtcaag 660
attcagattg ataaaataaa tgataccagt tatgatgttg ttgttaataa tgtccccct 720
tatattagtt cagtagccat tcctgtgtgg agtgaacaaa atggccaaga cgatttgaaa 780
tggtatcagg caacaaaagt ggctgatggt atatttaaaa caactgttta tttaaagaca 840
catcgttttg aattaggcaa ctatcaagct catatttatg gcgatagcca attaagcaag 900
aaactggatg gtttaggaga aactcatttt aatgttccgt ctattattaa ctatgaagat 960
cctcaggtaa ctattgatca ttataatatt aacaaaggaa cgtttgatgt gactgtagct 1020
gaaacagata attcaaaagc gatacaatca atcagtgctg ctgtttggtc tgatgctaac 1080
caagctaatc tttattggta tgaagctaaa cagctagcaa atggaaaggc tgcaattact 1140
gtcgatgttc aaaagcatgg caatcaaaca ggaagctaca atgtccatgt ttatgttcat 1200
tataatgatg gcacgactag cggacatgtt ttggctaatc agcagctcaa tcaaattgtc 1260
cattatcaac cttctgcagt aagaataaca gcctatatga atgaaaaaaa tacttatcca 1320
gttggtcagt gtacttgggg agtgaaagaa ttagctcctt ggatacctaa ttggcttggc 1380
aatggcgggc agtgggcaag tactgtagct gttaagggat tcaaaatagg aactgttcct 1440
aaagttggtg ctattgcttg ttggagtgat ggtggttatg gccatgttgc ttacgttacc 1500
cacgttgaga gtaataaccg tattcaagtg aaagaagcta attataagaa tcaacaatat 1560
atttccaatt ttcgcggatg gtttgatccc acgacttcct atttgggaag attaacttat 1620
atttatcctg actaa 1635

<212> Type : DNA
<211> Length : 1635
SequenceName : SEQ ID 737
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atggcaaata actattctcg tcgtcaacaa cccactaaaa aaacaaaggg gacaagtcgg 60
aaacgtccga ctgaacatat caaaacaggt ttttcagcac tgcaaaagag tgttgctatt 120
atcgctggta ttttagggat tattaccgct ttgattacta ttaataatta tcgcaatagt 180
tcacacaatg ataaaaaaga ttccacatct aaaaccacta tcatcaaaga aaaagaagtg 240
gatgactcaa atagtaacaa caatgctgct aattctcaag ctgaaaatga cagcaataac 300
aataataatt ctgcagaatc aaatcaaaac caaactgcaa caacagcaaa tgacagtaac 360
agcaattcgg ctaatcaaaa tcaagccaat agccaatcac aagcaaataa tcagcaaaat 420
caaaacaatg ctaatgctgg tcaataa 447

<212> Type : DNA
<211> Length : 447
SequenceName : SEQ ID 738
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
ttgaaaatat ttagttttgg aaccattcga aacaacacag ctctaaaacc taactatgat 60
gacacaacag cttttagcgg ttttggaacc attcgaaaca acacagctct aaaacagagc 120
actaactgcg ctagctggtt caatcgtttt ggaaccattc gaaacaacac agctctaaaa 180
ctcaccatat taattaatgg cgtttccttt tgttttggaa ccattcgaaa caacacagct 240
ctaaaacctc gtggaccaat ttttgtctcg acatttcgta atcgcgccat tcatctcagc 300
cagatttcag cttcaaaatg a 321

<212> Type : DNA
<211> Length : 321
SequenceName : SEQ ID 739
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgaaaagaa aacgaaatct ttactttctt attggtttat ttttgacagt ctttcttttg 60
ataggatgct caatgcagaa aaaaaccaaa tcagaaagca gctcgacttc tcaaaagact 120
actttacaaa caaaacagtc aagtgaaaaa tcaactgatg ctaagcaaac gacagaagct 180
cattcagaaa gcagtcagtc ttcttctcat tctaataacg aggaaaccct tgctcccatt 240

gatacaggcg ctgttttaaa ggctgattac agtagtatgg caggaacttg gaaaaatgaa 300
gaaggacaaa cgttgacatt tgatcagcga ggtctgacaa cccctggaat gacagtcagt 360
ctgttgaaca ttgatcaaga cggaaatctt ttgttaaatg ttgagactgg aacaaaaaag 420
aatctaactc tttatattgt gccagccaat aaaaccttat ctaatcaata ttttttctaat 480
ggtcaaagcg atgaatccga taaaacaaaa gatcgtattg tttcttctga gagtttaaat 540
agtggcaaat ttacaaaccg agtttattat catgtttcaa ctcattaa 588

<212> Type : DNA
<211> Length : 588
SequenceName : SEQ ID 740
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgacaccta aaaaaatcaa aatagctcta acagctctta tctctttgat gctcgcctta 60
tttttattct tgtttaatca ccattcagta agagaaaaca gtcagcaaga aaagttaaag 120
ataagtaaag caagttctaa aaaatcacaa acaagcactt cttctgttat gacaagtagt 180
cgaaaagcta ctgaacaaac aagccaagca cagactcaaa gtcaatcaca agcagaacaa 240
agtaacccta atgtgatcct ccccattccg caagaattag tcggcaccta caaaggttcg 300
agtccacaag catctgaaat aacttttacc atttcttcaa atggtcaatt acgtgctcaa 360
gctaattttg atcctgcttc tgatataaat gacgttaccg ccactgttag tggtgttaga 420
aaagtcgggg cagataccta tatttgggag tttgtctctg gtagttcagc tgctctttta 480
ccgggtgtta caggtatagg agggcttgga aagatgcagc ctggtttcat cctaaaaggg 540
gggcaattaa cacctatcat gtttacaggt tctgtagatg gtgaaattga ttattcacat 600
cccaatccct atccagtatc attaaacaag cagtaa 636

<212> Type : DNA
<211> Length : 636
SequenceName : SEQ ID 741
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgaaaaaaa taattaatgt tatcgtctta tcactatccg ttttttttcct gatagcttgc 60
agcaatagca gtaccgggga aaaaacaagt caatcatctg aagagactaa ggtccgatta 120
attgttaaaa cggattctaa taaaaccgat gaaaaagtcg ctttcaaaaa aggtgctact 180
gttatggatg tcttaaaaga caactataaa gttaaagaaa gcggtggttt tatcactact 240
attgatggtg tcactcagga taaaaaagca ggtaggtact ggatgtttga tgttaatgat 300
aagctggcat caaaagctgc tgataagatt aaggtcaaaa atggggataa aattgaattt 360
tatttgaaag tttataaagg taagaactag 390

<212> Type : DNA
<211> Length : 390
SequenceName : SEQ ID 742
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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acaagaaatt caaaggatgc tagtattatc agtacaccta ttttaacaat cctattgagc 120
ctctttttct tgattattat tggtatttta ttttttgtac tttatacttc aaatggtgga 180
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aaaaatgagg caaatagtca aactgatgaa cagacaacag aagcagaaac aagttcaagt 300
gaaacgacaa gttcctcttc agacagtgat ggcgagacaa ttacagttca aggaggtgaa 360
ggggctgcag caattgctgc gcgtgcgggt atttctgttg ataaactcta tgagctgaat 420
ccagaacata tgacgcatgg ctattggtat gctaaccctg gagataacat caagattaag 480
taa 483

<212> Type : DNA
<211> Length : 483
SequenceName : SEQ ID 743
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgccagata atcgcatgaa ctatagtatt gatagcaata tgcagtttcc cttggtagaa 60
attactttgg aaacaggaga atttgcttat attcaacgcg gtagcatggt ctatcacaca 120
cccagtgtca ctctcaatac caaagtcaat ggacgtggtt caggacttgg caagctagta 180
ggagcaattg gtcgttctgt aacgtctgga gaaagttttt tcattactca ggcagtatca 240
aatgctagcg atggtaaatt ggccttggcc ccttctatgc cgggccaagt tattgcttta 300
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ggtgaaggcg ttgtcaatac tttccgagga acgggtgaaa tttatgtaca aagtcttaat 660
ctgcagcagt ttgctggtgt cctacagggt ttcattacca atactaatcg ttaa 714

<212> Type : DNA
<211> Length : 714
SequenceName : SEQ ID 744
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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atgggatctc taaacattca atattaa 687
<212> Type : DNA
<211> Length : 687
SequenceName : SEQ ID 745
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :
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gatacacttt cagaaatcgc tgaaactcac aacacaacag ttgaaaaatt ggcagaaaac 180
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acagctacaa atggacgtta tatcggacgt tacggttcat ggactgctgc taaaaacttc 480
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<212> Type : DNA
<211> Length : 504
SequenceName : SEQ ID 746
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 7656
SequenceName : SEQ ID 747
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :
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taa 1143

<212> Type : DNA
<211> Length : 1143
SequenceName : SEQ ID 748
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 666
SequenceName : SEQ ID 749
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 408
SequenceName : SEQ ID 750
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :
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<211> Length : 5304
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SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6
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<212> Type : DNA
<211> Length : 1353
SequenceName : SEQ ID 752
SequenceDescription :

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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
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<212> Type : DNA
<211> Length : 6048
SequenceName : SEQ ID 753
SequenceDescription :

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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
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tgtgtttcct caatcgctat tggcgaccgt gcgcagggct tttctaaagt aagcagggac 780
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accagcggtt actctaatgt gtcaatcggg cgcaatgccg gacagggatt gggtgaaggc 960
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cgaaaccgcg ccccaaatgg cggagatgtt gtctggacgg gaacggaagc aggtacctac 1260
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aaaacaaacg atacctacac cgtcgaatac gaaacgttca tccccgtttt gactaaagcc 2220
attcaggaaa tggccgcaag aattgaaaca ttagaaaccg aaatgaagga atcgaaaaaa 2280
tga 2283

<212> Type : DNA
<211> Length : 2283
SequenceName : SEQ ID 754
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
atgaaaaata tctcacgcaa atgctttatg accagtgtgg tatgtattat tctaggaggc 60
attcttctag gggctggcta tgcaactgga ggacttcagg acattaaaca ccaaacagct 120
cccaaaaagg tcatcaaaac atttgaccaa ataactgctc ttgatattga cagttctgcc 180
tcaactatta cagtagagac aggacccgtt caaagaccaa cagtgaccta ttacacacat 240
cctaaattta ttgaccctat cgtcacaaca ttaacaggta agaccctatc tctttcgcaa 300
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agtcgtcaag agaagaacta ccgttctatt accattactg ttcctgaaaa aactagcctc 420
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atgcaattcg atggcaatct tactctttta cataccaaag tcaagaaagc tactatcact 540
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ctaactacta aagataccac tctaaaagcc atcaatattc aatcattaca ccctggcggt 720
atagaagccg agagaacaac ccttgaaaat gtgaccttca ctgtttctaa aagcaaagaa 780
gaagaagagg agaacgacta ctatgacaat gatgctatct tcaccgctca tgcccttacc 840
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ctgacaccag ctaagattgg taaggaatca acttcagatg ttatttctta tgtggctgag 1020
aataaagcag ctactggaaa tttaacggtt aatctcaata agggagacat tactatcaaa 1080
tga 1083

<212> Type : DNA
<211> Length : 1083
SequenceName : SEQ ID 755
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
atgtttaaga aagaaaattt aaaacaacgt tattttaatt ttggattagt agcgttagct 60
ctaacaatat tagccatcat ttttgccttc tcaagtaaaa atgctgatac taagtcttat 120
gctaagaagt cagaaagtaa aatggtaaca atcgacaagg ctccaaaaaa taatcatgct 180
attactaaag aagaaagcaa agaaaaagca aagagcattg cttcggagcc tattcccaca 240
gtagaaaact ctgtagctcc gacagtaaca gaggaagcac cggttgttca gcaagaagtg 300
actcaaactg ttcagcaggt atcttcagta gcctataatc caaataatgt ggtactttcc 360
aatggaaata ctgctggtat tgtaggaagt caagcggcgg cacagatggc agcagcaaca 420
ggtgttccac aatcaacttg ggaacatata attgcgcgtg aatctaatgg aaatcctaac 480
gcagctaatg cttctggggc atcagggttg ttccagacaa tgccaggttg gggttctaca 540
gcaacggttg aagatcaagt caatgcagcc ttgaaagcct atagtgcaca aggtttatca 600
gcttggggtt actaa 615

<212> Type : DNA
<211> Length : 615
SequenceName : SEQ ID 756
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
atgttagaag aattgaaaac acttattaaa aatccaaaat taatgattac aatgattggt 60

gtggccctag tgcctgcctt atataattta tcctttctag gctcaatgtg ggatccttat 120
ggtcgggtca atgaccttcc cattgctgtt gttaatcatg ataagcctgc aaagagagct 180
gataagtcat tgacaattgg gaatgatatg gtggacaaga tgtctaaaag taaagattta 240
gactatcatt ttgtatcttc aaaaagtgct caaaaaggtc ttaaaaaagg tgattattat 300
atggtcatta ctttacccga agatctttct cagcgagcaa caaccttatt aaatcccgaa 360
ccccaaaaac taactatccg ttaccaaact agtaaaggac atggaatggt cgctgctaag 420
atgggggaaa cagcgatggc taagctgaaa gagtctgttt cgcaaaacat tacgaagact 480
tatacctcag cagtttttag cagtatgaca gacctccaat caggattaaa agaagcctca 540
actggtagtc aagcattgga ttcaggagcg aagacagccc aaatgggtag tcaaatgctc 600
tcagataact tagcaggttt atctagtgct agttggcaat ttcaacaagg aactaatcgt 660
ttaacttcag gattaacggc ctatacagct ggtgttagtc aagtaaagga cggactaggg 720
cagctctcaa ccgatatgcc agtttacctg aatggggttt ctcggttatc acaaggagct 780
tctcaactta atcagggtct ttcacagttg acacaatcaa caacactttc tgatgataaa 840
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aacttggctg ccattgctca agctgcgcaa cagttacttg ttaaagaagc tgctgctcac 1020
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gatcagtcaa aacagttgga gcaacttaag gaagctgttg cacagattgc taatcaatcc 1260
aatcaagctt tgccgggagc aagttctgct ttaactgaat tatcaacggg attagcaaag 1320
gtaaatggta gcttaaatca acaagttcta ccaggaagta atcaattgac aacaggatta 1380
gcacaattaa acaggtataa tactgccatt ggttctgggg taataaaact ctcagaaggt 1440
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tctcagcagt tatcgcttgt ttctgtgact gataaaaatg ctaaagctgt cgcaaaacct 1680
cttgtgttaa atgagaaaga caaagatggt gttaagacga atgggatcgg gatggcacct 1740
tatatgattg ctgtttctct aatggttgtg gccctttcaa ccaacgtcat ttttgctaat 1800
tctttatctg gtcgtccggt caaagataaa tgggattggg ctaaacaaaa atttgttatt 1860
aatggtttta tttcgactat gggatccatt gttctctact tagctattca attattaggg 1920
tttgaagccc gttatggtat ggaaacctta ggatttatta tgctaagtgg ttggacgttt 1980
atggctcttg tcacagcttt ggtcggttgg gatgatcgat atggctcttt tgcttctttg 2040
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caaaccattt cattatcagg tcatattgga gtagaagtga aagtcttaac tggtttctta 2220
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<212> Type : DNA
<211> Length : 2274
SequenceName : SEQ ID 757
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
atgagcagag acccaacata tacaataaac gagcacgact tatcttttgc agatggtcgt 60
ttttatgtga cctttaaggc agataagtca agtgagactg tgagacttaa cagtagttgc 120
cttggcaata ccataatcaa aaagctacag gtcgaggatg acaatacaat gcacgacttt 180
gtaaagccta aagttaccac tcaacaagct tttggactag ctcagcaggt caaagagctt 240
gatttacagc taaaagaccc taagtcagat ttgtggggca aaatcaagtt caataataag 300
gcaatgctag tcgagtacgc caacaaagag atgtcaagtg ccattgcgca atcagctgag 360
cagatattgt tacaagtcaa gtctattgat gatgaacgat attccaaatt tgagcaaact 420
ctgaatggta tcaaacaaac tgtcaaaagt gagtcagttg aatccgcacg tactcagcta 480
gcatcaatgt ttgatagtcg tattagtgga cttgatggca aatacagtcg tttgagccaa 540
acaattgata gtcttagcag tcgtcttgat gatggtgttg gtaactactc aacgctatct 600
caaaaggtaa gtggcattga tttacgagtt agtaatgcag ctaatgatgt ttctcgattg 660
tctcagacag cacaaggatt gcagtcacaa atcacaaatg caaaccaaaa ttacagcagt 720
ttgtctcaga ctgtacaggg actacaaaca actgtacgtg ataatcaatc aaatgctaca 780
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acaactattg ctcagagtta cgacaagata gccttcgcaa tcagggataa actcccagca 900
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tcagtccaat ctgtaacact atcagctagc aaaattactg gaggtgtatt agccgctaca 1260
aatggggcaa gtcagtggga cctaaataat gccaatatga cctttaatcg agatgccaca 1320
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ggcattacct catcaggaga tggcatcgac agcgcttctt ccggtcgttt tgcagggcta 1500
aggtcattta ggtacgctac gggatataac catactgctg cagtcgacca aaccgagcta 1560
tacggtgata atgtcttgat tgcagatgac tttagcatca atcgaggatt taaatttaga 1620
ccagacaaaa tggaaaaagt gctcgacatg aacgacttgt atgcggctgt agtagcctta 1680
ggccgctgtt gggggcactt ggctaacgtc ggctggaata ctgctcatag caattttaca 1740
agtgctgtga gtagggaatt gaataactac atcactaaaa tttaa 1785

<212> Type : DNA
<211> Length : 1785
SequenceName : SEQ ID 758
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :

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ctcaatagtg agttagataa agttgccaag cacggtgaca aaggcagctc ctctcttaaa 120
aaatttgcgg ttggtgcagg agtctttaaa ttagcttcgg ctgcagttga tttggttagt 180
caatctcttg gcaaggctat cacaagattt gacacgcttg aaaaatatcc aagggtcatg 240
aaagctatgg ggcatagcgc tgaggatgtt gctagatcaa ctgataagtt agcgaacgga 300
attgatggac taccaacaac tttagacgag gttgtcggaa ccgctcaacg tttgacctct 360
attactaagg atatcaataa atcaactaat ctcacactag cattaaataa tgccttttta 420
gcttcaggag cttcatcaga ggctgcaagc cgagggctgg agcaatatgc ccaaatgcta 480
tcagctggta aggttgatat gcaagcttgg aaaaccctcc aagaaacaat gccttatgcc 540
ttacaacaaa ctgcggaagc ttttggattt gcaggggcat cggctcaaaa ggatttttat 600
gaggcgttaa aaaacgggca aataacattt gaccaatttt ctaataagtt gattgagtta 660
aatgatggtg tcggcggttt tgcagaacta gccaaagaaa atagtaaagg gattgaaacc 720
tcttttaaca acatcaagaa cgctattgca aaaggtgtgg ccaatagcat taaggctttg 780
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acaaccatta agactgtgac tgcggtacaa gcggtaagta ccacgatgac taaagcagat 1140
atggttgcaa gactatctca gttaggtgtc ttaaaagcca gtaccgtgat ttatggtgtt 1200
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aataactcaa ataacagttt tacccttaat gtcaaggttg atgaatccga cggtaatagc 3180
cacgagaaat atcaacgctt attcagagaa tttagctggt atattcaaca acaacaagga 3240
aggttaggtg atgttaaatg a 3261
<212> Type : DNA
<211> Length : 3261
SequenceName : SEQ ID 759
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
atggctaaag aaccatggga agaaaaaatt gttgatgata ctatagggac acgaacacgt 60
aaatcaagaa atgctttcat tagcacgcct tggttgactg ctttattaag tgtattcttt 120
gtcatcattg ttgctatact ttttattttc ttctatacat caaatagcgg tagtaataga 180
caagctgaaa caaatggttt ttatggagca tccactcata aaaaaacaag gaaagcttct 240
aacgctaaaa aaacatcaag tagttcaaca actacagaca caacaccttc tagcgaagaa 300
acacttgctt ctagtgaagg aaccggcgaa acccttactg tattggcagg tgaggggca 360
gcttctattg cagctcgtgc aggtatttct gtggagcagt tacaagcact taatccagag 420
cacatgactc aaggatattg gtatgccaat ccaggagatc aagtcactat taaataa 477

<212> Type : DNA
<211> Length : 477
SequenceName : SEQ ID 760
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
atgtctaaaa gaggaaaaat taaaataaca acgaaaacaa agcttattac agctagtgtt 60
ataacgctag tattaattat aactggagta gtcttgtgga aacaacaaca aaatacgcta 120
acagctgata tcgctaaaga accttactct actgttagtg taactgaagg gagtattgct 180
tcttcgactt tactatcagg tactgtaaag gctttatcag aggaatatat ttattttgat 240
gctaataaag gaaatgatgc aactgttaca gttaaaatag gtgatcaggt aacgcagggc 300
cagcaattag ttcaatataa tacaacaaca gctcagtcag cttatgatac tgctgttagg 360
agtcttaaca agattggccg acaaattaat catcttaaaa catacggagt tcctgctgtt 420
agtacagaaa ctaataaaga tgaagctacc ggtgaagaga cgacaacaac agttcaacca 480
tcagctcagc aaaatgctaa ttataaacag cagctgcaag atttaaatga tgcttatgca 540
gatgcacaag cagaagtaaa taaagcgcag atagcgttaa atgatacagt agttatcagt 600
agtgtctctg gaactgttgt ggaagtaaat aatgatattg atccttcttc aaagaacagt 660
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tacaagattg atattataag tcctcttaac cagcttaaac aaggtttcac tgtttctgtt 960
gaggttgtta atgaagctaa acaggcctta gttcctttaa cggctgttat taagaaagat 1020
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acacttggaa acgcagatgc acaacaacaa gaaattcata aaggagtagc tgttggtgac 1140
attgttattg ccaatccaga taaaaatatc aaaccggata aaaaactaga aggggttatt 1200
tcaataggta ccaacacaaa accggaaaaa gattctcaat caaagaataa aaaatcaggg 1260
gtggataaat ag 1272
<212> Type : DNA
<211> Length : 1272
SequenceName : SEQ ID 761
SequenceDescription :

Sequence

<213> OrganismName : Treponema pallidum subsp. pallidum str. Nichols
<400> PreSequenceString :
gtgctccgct tgccaactgc gcgcgcgtgc attacaatgg gcaccatgat cagacataca 60
tttacgcata ggtgcggagc gctcctgtgc gcgctggcgt tgggaagctc cactatggct 120

gcgaccgccg ctgcaaaacc caagaaaggg caaatgcaga aattgcggca gcggccggtg 180
tgggcgccca ccggcgggcg gtatgcgtct ttggacggtg cgtttaccgc gctggcaaat 240
gatgcaagtt tctttgaggc aaatccggca ggaagtgcga acatgacgca cggggagctg 300
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gacttttcta ccaccacgga gcccgtgtgc acacctgctt cgaaccccat taagcagcgc 480
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tgcacgagta cctgtgaaaa gtgtggttgc tgcaaggaga ggtgctgctg caacggcaag 780
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<212> Type : DNA
<211> Length : 1227
SequenceName : SEQ ID 762
SequenceDescription :

Sequence

<213> OrganismName : Treponema pallidum subsp. pallidum str. Nichols
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gtggtggcgt acgagcccat tcgccccggg gatcagctgc tcaaaattgg cattgttgca 180
ggctgccagt tgtacatagc agggggaaat ggaaccaacg gctcttcgag ttccggcacc 240
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<212> Type : DNA
<211> Length : 660
SequenceName : SEQ ID 763
SequenceDescription :

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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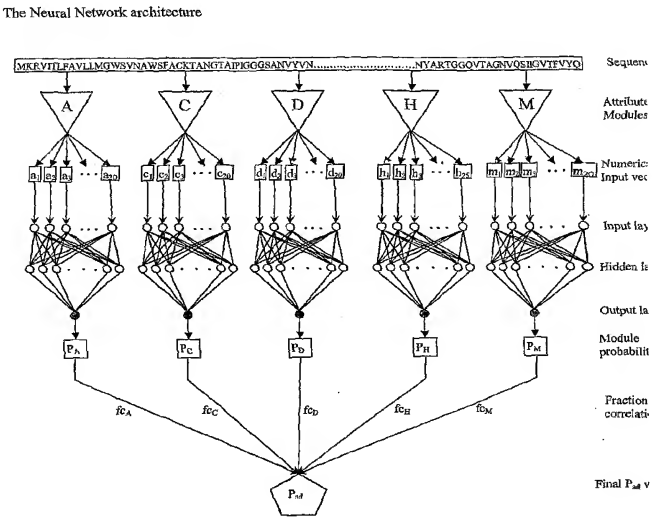
[Continued on next page]

(54) Title: COMPUTATIONAL METHOD FOR IDENTIFYING ADHESIN AND ADHESIN-LIKE PROTEINS OF THERAPEUTIC POTENTIAL



(57) Abstract: A computational method for identifying adhesin and adhesin-like proteins, said method comprising steps of computing the sequence-based attributes of a neural network software wherein the attributes are (i) amino acid frequencies, (ii) multiplet frequency, (iii) dipeptide frequencies, (iv) charge composition, and (v) hydrophobic composition, training the artificial neural Network (ANN) for each of the computed five attributes, and identifying the adhesin and adhesin-like proteins having probability of being an adhesin (P_{ad}) as ≥ 0.51; a computer system for performing the method; and genes and proteins encoding adhesin and adhesin-like proteins.

WO 2005/076010 A3

Declaration under Rule 4.17:
— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:
— *with international search report*

(88) Date of publication of the international search report:
27 April 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

Inte ial Application No
PCT/IN2005/000037

A. CLASSIFICATION OF SUBJECT MATTER
G06F19/00 G01N33/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06F G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ZUEGGE J ET AL: "Deciphering apicoplast targeting signals - feature extraction from nuclear-encoded precursors of Plasmodium falciparum apicoplast proteins" GENE: AN INTERNATIONAL JOURNAL ON GENES AND GENOMES, ELSEVIER, AMSTERDAM, NL, vol. 280, no. 1-2, 12 December 2001 (2001-12-12), pages 19-26, XP004313161 ISSN: 0378-1119 the whole document ----- -/--	1-13, 18-21

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
11 November 2005	02. 01. 2006

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Lüdemann, S

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/IN2005/000037

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	BRADLEY PHIL ET AL: "BETAWRAP: Successful prediction of parallel beta-helices from primary sequence reveals an association with many microbial pathogens" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, vol. 98, no. 26, 18 December 2001 (2001-12-18), pages 14819-14824, XP002350912 ISSN: 0027-8424 the whole document	1-13, 18-21
A	FINLAY R BRETT ET AL: "Common themes in microbial pathogenicity revisited" MICROBIOLOGY AND MOLECULAR BIOLOGY REVIEWS, vol. 61, no. 2, 1997, pages 136-169, XP002350913 ISSN: 1092-2172 the whole document	1-13, 18-21
P,X	SACHDEVA GAURAV ET AL: "SPAAN: a software program for prediction of adhesins and adhesin-like proteins using neural networks" BIOINFORMATICS (OXFORD), vol. 21, no. 4, 15 February 2005 (2005-02-15), pages 483-491, XP002350914 ISSN: 1367-4803 the whole document	1-13, 18-21
E	WO 2005/057464 A (COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH; BRAHMACHARI, SAMIR, KUM) 23 June 2005 (2005-06-23) the whole document	1-13, 18-21

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IN2005/000037

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-13, 18-21

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

Invention 1: claims 1-13, 18-21

A computational method for identifying adhesin and adhesin-like proteins comprising the steps of claim 1.

Invention 2-275: claim 14

A set of 274 annotated genes encoding adhesin and adhesin-like proteins, having seq. id nos. 385 to 658.

Invention 276-380: claim 15

A set of 105 hypthetical genes encoding adhesin and adhesin-like proteins, having seq. id nos. 659 to 763.

Invention 381-659: claim 16

A set of 279 annotated adhesin and adhesin-like proteins, having seq. id nos. 1 to 279.

Invention 660-764: claim 17

A set of 105 hypothetical adhesin and adhesin-like proteins, having seq. id nos. 280 to 384.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/IN2005/000037

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2005057464 A	23-06-2005	US 2005136480 A1	23-06-2005